The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

VOL. 23. No. 22-A TULSA, OKLAHOMA, OCTOBER 23, 1924

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Crude Oil Situation Is Improving

Average daily production in United States week ended Oct. 18, 1,961,307 bbls. Loss from previous week, 11,908 bbls.

Operators More Optimistic as Production Continues to Decline. Warn Against Premature Drilling Campaign

Highest daily average estimated production this year, week ended Aug. 23, 2,057,319 bbls. Lowest, January 12, 1,871,143 bbls.

By Andrew M. Rowley

While operators throughout the country are taking a much more optimistic view of the crude oil situation as the result of the substantial reduction in production recorded during the past few weeks and other developments, such as the action of the Prairie Oil & Gas Company in buying all of the oil it runs, close observers of the general situation feel great caution should be exercised in drilling operations for some time to come if the producers are to obtain the full benefit of favorable conditions. There is little doubt but that the bottom has been reached as far as the price structure of crude oil and gasoline is concerned at this time. But the great stocks of crude and refined oils are hanging like the sword of Damocles over the industry. Starting an intensive drilling campaign at this time in the hope crude oil prices will be advanced soon is like a man who has been seriously ill for many weeks getting out of bed and trying to do a hard day's work. He would suffer a relapse. So will the oil industry suffer unless present conditions are permitted to obtain over a period of convalescence from the effects of the depression and overproduction of the past couple of years.

There is a general impression crude oil prices will begin to advance within the next two months. If production continues to decline at the rate it has done within the past few weeks and field operations show no signs of bringing forth new fields, it is likely this impression may be realized. It is in the very fact this condition is a possibility that the danger lies. Should drilling be stimulated as a result of this belief and production held to its present level or be increased, any chance of crude price advances would be postponed indefinitely. It must be remembered crude oil is still being placed in storage. Also that stocks of crude and refined oils usually increase during the winter. When oil is being placed in storage prices do not advance. Hence the matter of prices is entirely with the operators.

Indications that Oklahoma's rapid decline in production may be checked somewhat at least by the end of this year were plainly evident during the past week as the result of developments in the Cromwell Field area. The test of the Tidal Oil Company on the east side of the structure gauged 175 barrels an hour for two hours Sunday and placed 2,422 barrels of oil in tanks in 24 hours ending Monday morning. This side of the Cromwell area had been in doubt as to its productivity. The Tidal well opens up a large territory for development. At the same time, developments in the Papoose Pool indicate this section might become another Cromwell, it seeming probable now that the structure may extend towards the north and that it has signs of being similar to the Cromwell Pool.

Developments in other oil producing areas during the past week are of especial interest to operators in all sections. In the Eastern fields, T. A. Sheridan brought in a well in the Davenport Pool, Warren County, Kentucky, which was estimated to have had an initial flow of from 2,000 to 5,000 barrels daily from a depth of just 461 feet and 4 feet in the sand. A well of that size in that area is quite unusual.

A five months' old producer in the South Vernon Pool, Wilbarger County, Texas, when drilled deeper, blew in with an estimated production of from 2,000 to 2,500 barrels daily, making it the largest producer drilled in that pool. The wel had been making 250 barrels from a depth of 1,970 feet and was drilled to 2,031 feet. The producing territory in that area was also extended half a mile east by a test which is showing for from 150 to 200 barrels from the shallow depth of 1,360 feet.

Possibilities of a new field in Cowley County, Kansas, loomed during the week when the Emerald Oil Company and Buffalo Trust Company's No. 7 Kukuk in the Winfield Pool increased its flow to 50 barrels an hour when deepened to 3,031 feet. This pool has four producing sands and the finding of gusher production at the greater depth has already started active development.

The Transcontinental Petroleum Company brought in a 20,000-barrel well just north of the Cacalilao sector of the Panuco Field in Mexico, on a lease where the only previous producer of importance made just 1,000 barrels. The new producer was finished at 2,230 feet, somewhat deeper than the other wells on the lease.

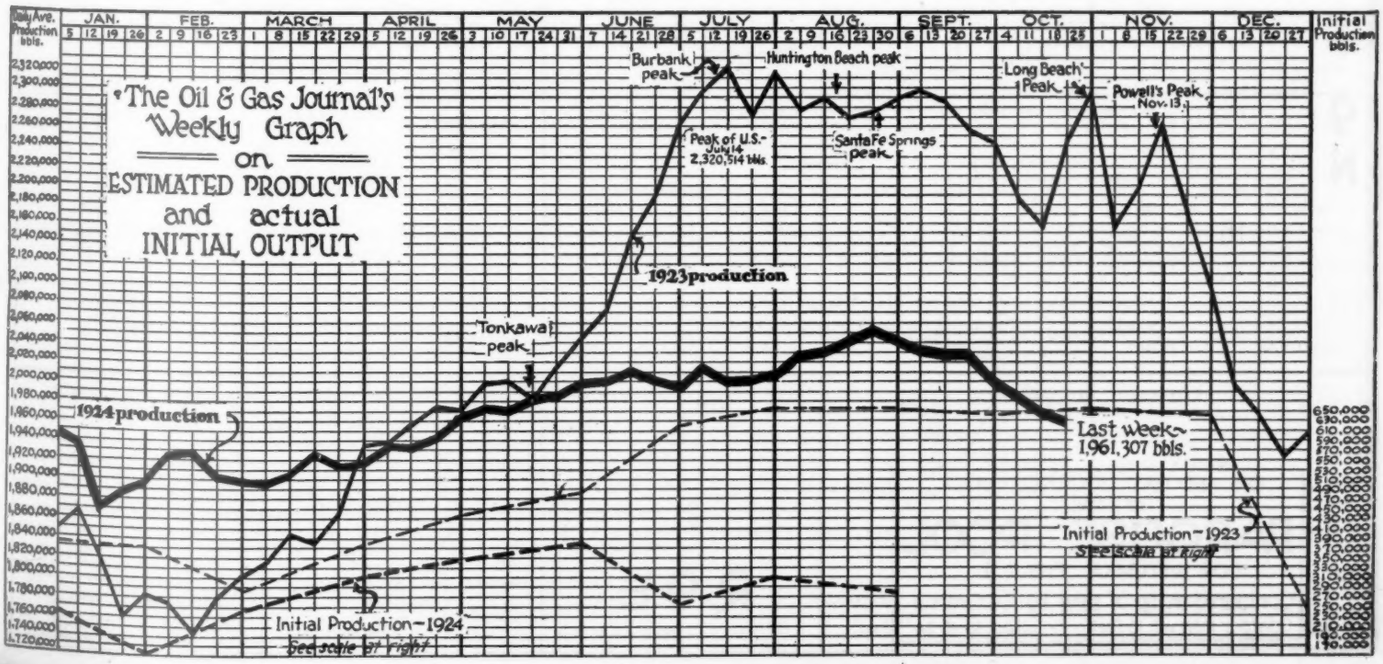
Th Union Oil Company completed an important well in the Rosecrans Field when its No. 2 Howard Park came in flowing 700 barrels. The well indicates there is a very deep dip of the srtucture of the field to the north, this fact adding to the importance of the test and making oil development work in the extreme northern part of the area look quite unfavorable.

PRODUCTION IN THE UNITED STATES

Estimated daily average production in the oil fields of the United States for the week ended October 18, and a comparison with previous week follows:

	Oct. 18	Oct. 11
Oklahoma—Northern Fields:		
Tonkawa	99,540	99,465
Burbank	73,480	75,120
Other Osage Fields	42,790	44,200
Cushing and Shamrock	23,710	23,670
Bristow and Eastern Bristow	45,870	46,425
Cromwell	38,640	39,575
Stroud	8,050	9,330
Northern Miscellaneous	107,705	108,310
Southern Fields	68,370	68,780
Total Oklahoma	508,155	514,875
North Louisiana	52,850	51,650
Arkansas—		
El Dorado and Calion	11,910	11,765
Smackover Light	33,705	34,860
Smackover Heavy	76,765	79,815
Stephens and Nevada	3,690	3,840
Total Arkansas	126,070	130,280
North Central Texas	120,955	120,515
Powell	75,932	75,400
Mexia, Currie, Richland, etc.	53,350	53,410
Kansas	84,580	84,050
Total Mid-Continent Area	1,021,892	1,030,180
Gulf Coast	84,570	85,770
Southwest Texas	34,790	36,630
Eastern	107,100	107,250
Rocky Mountain Area	103,255	107,885
California—		
Santa Fe Springs	55,000	54,000
Long Beach	138,000	138,000
Huntington Beach	40,000	39,000
Torrance	52,000	50,000
Dominguez	33,700	33,500
Remainder of State	291,000	291,000
Total California	609,700	605,500
Total United States	1,961,307	1,973,215

DECREASE, 11,908 BARRELS


The Oil & Gas Journal's Weekly Graph on ESTIMATED PRODUCTION and actual INITIAL OUTPUT
Daily Ave. Production bbls.
JAN. FEB. MARCH APRIL MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.
Initial Production bbls.
Burbank peak
Huntington Beach peak
Long Beach 1st Peak
Powell's Peak Nov. 13
Peak of U.S. July 14 2,320,514 bbls
Santa Fe Springs peak
1923 production
Tonkawa peak
1924 production
Last week 1,961,307 bbls.
Initial Production—1923
See scale at right
Initial Production—1924
See scale at right

New Menace of Cromwell and Papoose

Development of East Dip of Former and Trend of Production of Latter May Mean Considerable Output of Crude

By C. D. Lockwood

The decline of Oklahoma's crude oil production, it seems, never runs smoothly. As soon as one danger point seems to have been safely passed, and just as quickly as one big field that has been menacing the market begins to ebb, another, with equal potential power looms up on the horizon and threatens to delay the restoration of normalcy in the industry for months to come. Now, two of Oklahoma's "Big Three" are showing signs of trouble brewing.

Oklahoma producers and others who are directly affected by the flood of oil coming from flush pools in the State had hardly begun to breathe easily, figuratively speaking, after the deep sand production in the Tonkawa Field seemed to have passed its peak permanently, when two older producing areas assumed greater proportions and make it appear possible that the Cromwell story may have to be told over again in two different places within the next few months. These two areas in question are the east side of the present Cromwell Field, across the line in Okfuskee County, and the north side of the present Papoose Pool, also across the line in Okfuskee County.

Comparison of Pools

A comparison of the accompanying map of the Papoose Pool, with a sand contour map of the Cromwell Field (an early one was published in the June 12 issue of The Oil and Gas Journal) reveals a startling and uncomfortable similarity. In fact, geologists are at a loss to account for the peculiar sand conditions of the old part of the Papoose Pool in Sections 4 and 5-9-9 on any other theory than that the development there is on the south end of a structure that will probably be similar to and may prove to be as large as the Cromwell structure. The two pools are producing from the same horizon and there is no particular reason why they should not be more or less alike. However, in the Papoose Pool, you find such conditions as the Atlantic Oil Producing Co.'s two water wells offsetting the Berry Petroleum Co.'s two excellent oil producers in Section 4, while the

OKFUSKEE
COUNTY
HUGHES
T 10 N
T 9 N
R 9 E
OIL AND GAS JOURNAL MAP of the PAPOOSE POOL (OR WETUMKA FIELD)
Contoured on top of sand by F.C.Greene
Contour interval, 10 feet ~ ~ Dated: 10-16-24

Transcontinental Oil Co. got a well on the other side of the water in Section 5. This is believed by geologists to be due to the fact that the water line is not level, but slopes upward to the east. The sloping of the water line is now an established fact, having been proven in the Cushing Field. On the other hand, there are no failures in the main part of the Cromwell Field and it is reasonable to suppose that the freakish nature of the 9-9 area may be explained by the fact that the main part of the field is to the north.

Contouring Papoose Horizon

In contouring the Papoose horizon, the sand elevation of the Mid-West & Gulf gasser in Section 33-10-9 had to be estimated as it has not been drilled to the Lyons sand. Like the early gassers in the Cromwell Field, it has proved so profitable as it stands that it has not been deepened to the oil pay. The 25,000,000-foot gas production is coming from the is 16 feet lower, structurally, than the sand in T. B. Slick's producer in Section 35-10-9.

Instead of the small closure and steep syncline shown in Section 4-9-9, it is probable that there is a small fault similar to the one shown in the Cromwell Field graph.

The Papoose Field came into being in July of 1923 when the Papoose Oil Co. brought in its No. 1 Simon C SE SE SW Section 4-9-9, which made 400 bbls. from sand at 3,330-33 feet. Development progressed slowly because of freakish nature of the sand and lack of any indications on which to forecast the trend of production. At the beginning of this year, the production of both the Papoose and Gilcrease areas together was only about 400 bbls. but after many fluctuations it started gaining steadily in the past few months and climbed above the 15,000-bbl. mark during the week ended September 25.

The most remarkable well in the old part of the Papoose Pool was the Berry Petroleum Co.'s No. 1 Meadows, which actually gauged 2,868 bbls. in its first 24 hours after reaching total depth of 5 feet in sand topped at 3,321 feet. It held up to an average of 2,760 bbls. daily for the next week and produced better than 2,500 bbls. daily for several weeks.

A few wells in the Gilcrease part of the area have been drilled to the Lyons sand, but none found any oil in that horizon. These wells are shown on the map, the sand elevations being given.

Problematical East Dip

The accompanying chart showing logs of wells in the northeast portion of the Cromwell Field shows what the drill has revealed in reference to the problematical east dip of the structure as outlined in The Oil and Gas Journal of July 17. It has long been the opinion of many geologists that a fault would be found somewhere to the east of the Cosden Oil & Gas Co.'s high gas well, and apparently the Waite Phillips Co.'s No. 1 Tiger has narrowed the zone in which that fault is to be found.

It is unfortunate for the geologist that the Roxana Petroleum Corp.'s No. 1 Moss has been drilled with a rotary, as it makes correlation of the sand exceedingly difficult. Because of the uncertainty caused by the rotary log, the correlations between the Waite Phillips and Roxana wells have been indicated on the chart as questionable. However, the Roxana men seemed to be of the opinion that they had reached the top of the Cromwell sand at 3,365 feet, although this appears unreasonably high, making it higher than the original Cosden gasser. The well was drilling at 3,375 feet in sand when the chart was made.

With the known east dip of the structure, and the apparent location of the fault, it is highly probable that another producing area of considerable extent will be developed to the east, and perhaps to the southeast of the wells now drilling. Discovery of production in the Tidal Oil Co.'s No. 1 King, C NW SW SW, Section 14-10-8, on the Okfuskee County side of the line, makes the east side now look like a dangerous area, and it will undoubtedly receive some additional tests immediately. There is the possibility, of course, that another fault may be found out there somewhere, and the staking of locations will be a ticklish proposition. They will have to feel out Section 14 carefully.

The probable direction of the indicated fault, in the opinion of many who have studied the field, will be about due north and south. They base their prediction on the north and south trend of synclines and saddles across the west half of Section 15.

Referring to the opening statement in which it was indicated that the Tonkawa Field had seen its best days, some of the production figures are interesting. On August 31, the deep sand was yielding 77,335 bbls. daily from 19 producing wells, and on October 15, 37 producers were unable to supply the same amount, gauging only 75,194 bbls. It would be surprising, indeed, if the peak of 88,607 bbls., registered on September 13 is ever surpassed or equalled, especially as the completions will be scattered out.

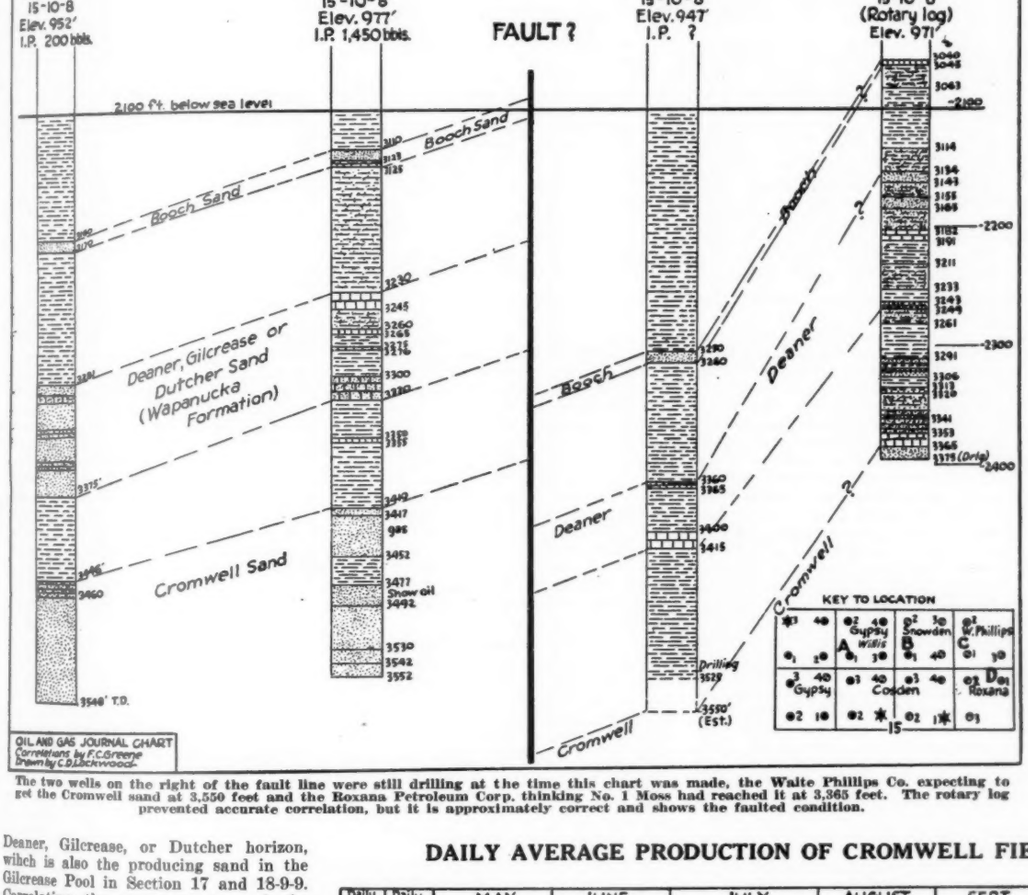
Probable Production

Estimates of the probable production of the Cromwell Field during the remainder of this year have varied widely. Some prophets think the completion of the many wells now drilling in the field, especially those in the direction of the Central National well in Section 4-10-8, will boost the daily output of the field to a point near its old high mark of 63,497 bbls. for the week ended August 12.

Scientific estimates, however, based on the cold figures obtained by averaging the initial production of the first 60 wells, and studied in conjunction with the average drilling time necessary to complete a well in that field, indicate the produc-

(Continued on Page 111)

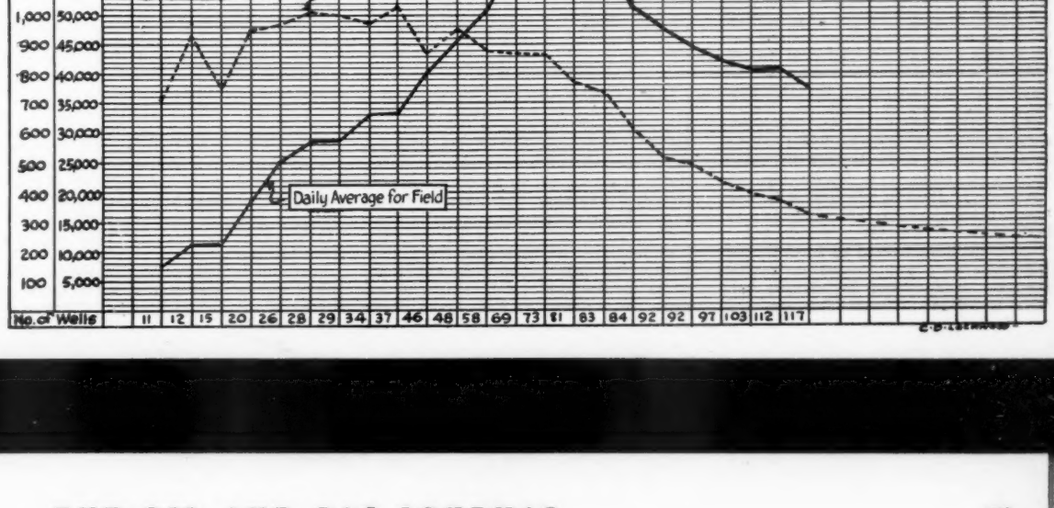
CROSS SECTION OF NORTHEASTERN PART OF CROMWELL FIELD



The two wells on the right of the fault line were still drilling at the time this chart was made, the Waite Phillips Co. expecting to get the Cromwell sand at 3,550 feet and the Roxana Petroleum Corp. thinking No. 1 Moss had reached it at 3,365 feet. The rotary log prevented accurate correlation, but it is approximately correct and shows the faulted condition.

Deaner, Gilcrease, or Dutcher horizon, which is also the producing sand in the Gilcrease Pool in Section 17 and 18-9-9. Correlating the upper strata and the Deaner sand in the Mid-West well with logs of the wells in Section 3 and 4, the Lyons sand should be found at the elevation shown on the map. Comparing this high elevation with that of the Slick well in Section 35, which was holding up to over 2,800 bbls. with the bit only 7 feet in the sand, although it is quite a way down the slope of the structure, and the additional fact that there isn't a single dry hole within a radius of 2 miles of the Mid-West gasser to condemn the Lyons sand, it is apparent that this pool has all the earmarks of a trouble maker during the next half year. The nearest failure in the Lyons sand is a well drilled by the Cosden Oil & Gas Co. in the NE cor. SW of Section 21-10-9, which found a hole full of water in sand reached at 3,370 feet, and was drilled on down to 3,540 feet. A graphic log of this well was published in the July 17 issue of The Oil and Gas Journal. The top of the sand

DAILY AVERAGE PRODUCTION OF CROMWELL FIELD, MAY TO OCTOBER



Gasolines Again Advance in Oklahoma

All Grades 1-4 to 1-2 cent Higher With Brisk Domestic Movement Kerosenes Are Lower. New Type of Marginal Contract Offered

By C. O. Willson

Another advance in straight run gasolines featured developments in the Group 3 (Oklahoma) refined market during the past week. All grades of straight run for which there is a seasonal demand, with the exception of naphthas, advanced ¼-cent to ½-cent during the week. The U. S. Motor 58-60 grade advanced from a price level of 6¾-7 cents to 7-7¼ cents, with a steady demand, indicating that this price boost level might be raised an additional ¼-cent before the end of the week. The greatest advance of the week was in the 60-62, 400 grade which responded to an unexpected increase in demand with prices which were ½-cent higher than a week ago. The advance in the remaining grades of straight run gasolines was ¼-cent.

All other products, with the exception of kerosene and neutrals occupy as firm or a stronger position than they did a week ago. All grades of kerosene are offered more freely and several refiners have lowered their prices either ⅛-cent or ¼-cent. In most instances, the few manufacturers of neutrals in Oklahoma lowered their prices in line with the reductions announced by Cosden & Co., effective October 15. These reductions, which varied from ½-cent to 1½ cents, applied to most grades. Natural gasoline prices are unchanged with fuel oils having recovered from the slight reductions of the previous week.

The advance in the straight run gasolines, especially the 58-60 U. S. Motor grade, has been gradual and has been due entirely to developments in the domestic market, as there was no export buying during the week. The 6¾-cent 58-60 grade which was offered freely the first of last week became less and less apparent and by Saturday the general price level was 7 cents. On Monday and Tuesday several of the larger concerns advanced their prices to 7¼ cents direct to the trade.

Underlying Strength

As previously indicated, there has been nothing spectacular in the advancing gasoline prices of the past week and in the opinion of many market observers, this fact points to the underlying strength of the upward trend which has now been under way for two weeks. Individual refiners, finding themselves sold up for 10 days and in many cases until the end of the month, simply advanced their prices ¼-cent to ½-cent and there has been no indication of an attempt to develop an artificial price structure which has brought disaster many times in the past.

Probably a dozen reasons have been advanced by the sellers in explanation for the gasoline advances of the past two weeks, a development which has come as a surprise to many who keep in close touch with Mid-Continent market conditions. In the first place, it is generally agreed that the domestic demand has been greater than was expected for this season of the year. Weather conditions have been favorable for motoring. What this has meant in gasoline demand can be gauged from the statement of one refiner with jobbing connections in the Middle West who stated that his bulk and service station sales so far in October were running 10 to 15 per cent greater than his company had predicted in September. As a further indication of this situation it is known that the Standard of Indiana gasoline sales have also greatly exceeded that company's expectations for October.

Jobbers Forced to Buy

Jobbers have been forced to buy on the spot market and in addition take their maximum allowance on contracts. Just how this unexpected demand has found the Oklahoma refiners can best be determined by a consideration of data compiled by the Western Petroleum Refiners Association from the Bureau of Mines report for the first eight months of this year, covering refinery operations. Comparing the statistical position of the Oklahoma and Kansas refiners, which are reported together in the Government's report, with the entire United States, the association finds that the former occupied a relatively strong statistical position on September 1 of this year.

Contrasting the statistical position of the Oklahoma-Kansas refiners on September 1, this year and last, the bulletin of the association shows that September 1, 1923, the refiners of the two States had 19 per cent of the total stocks in the United States and on the same date this year 11 per cent. The Kansas-Oklahoma refiners the first eight months of last year shipped 18 per cent of the total shipments for that period and 17 per cent this year. The most interesting comparison lies in the fact that while last year the ratio of stocks to shipments was 23 per cent, for the same period this year it was 15 per cent.

Summarizing this situation the Association official bulletin says in part, "regardless of mistakes of the past, the Mid-Continent refineries during the current year have more nearly conformed their gasoline production to economic laws and manufactured as their necessity required. Had other refining districts of the country applied the lessons of the past as well we would hear less regarding excess gasoline."

Day's Supply

It is probable that the September and October report of the Bureau of Mines will show still further improvement in the statistical position of the Kansas-Oklahoma refiners, and in fact the entire Mid-Continent area, so far as gasoline is concerned. In this connection, according to the Western Petroleum Refiners Association, stocks of gasoline in the Mid-Continent area on September 1 only represented 30 days' supply based on shipments for the first eight months of the year. In contrast the East Coast stocks represented 62 days, Colorado-Wyoming 92 days and the Gulf Coast 59 days.

The market significance of all this statistical data lies in the fact that Oklahoma refiners and all those within the Mid-Continent area are in a better position than any other section of the country to take advantage of any fundamental turn for the better in the oil industry. The experience of the past two years has shown that the Mid-Continent cannot in itself bring about improvement in markets when general conditions are unfavorable but the developments of the past two weeks indicates that it may lead in the advancing markets as it has many times in the past.

Crude Improvement

Another explanation offered for the advance in gasolines offered by many sellers has to do with the improvement in the crude situation. Refiners are authority for the statement that the crude situation is "tightening." This from the standpoint of the large purchaser was reflected a week ago in the action of the Prairie Oil & Gas Co. when it agreed to pay for all the oil it was running and at the same time purchase all it had stored to the account of producers since mid-summer. This has been interpreted as concrete evidence that the crude situation is improving and that the next change in the situation would be higher posted prices for crude oil. This has very materially strengthened the position of the refiners in asking higher prices for gasoline.

Briefly summarized, it can now be said that in the opinion of probably a majority of the trade in Oklahoma, straight run gasolines have definitely taken a turn upward which will continue at least until the first of the year. What will happen after that date, few will attempt to predict. But they feel certain that, as occurred in the past, an advancing market will be maintained in crude as well as gasolines, supported by the expectation that the year 1925 will not be faced with excess crude as was this year and the year before.

No summary of opinions would be complete without stating that many disagree with the above conclusion. There are several purchases of gasoline being postponed by buyers in the Mid-Continent in the expectation that as soon as the winter season strikes in the Middle West with the usual large drop in gasoline consumption prices will be lower than they are at the present time. These buyers feel that with the falling off in the current demand, refiners will not store their excess gasolines and will offer material at whatever price is necessary to move it.

Gasolines and Naphtha

Marginal contracts for the sale of gasoline are still receiving the serious consideration of refiners. As has been explained in these columns previously, refiners and jobbers are both dissatisfied with the contracts of the past which have been based on the Standard of Indiana tank wagon quotations. Cosden & Co. and many smaller concerns have refused to renew contracts at the old basis. Various types are being discussed while the general trend at this time calls for the basing of the contracts on the spot market prevailing at the time the gasoline is shipped.

The trade during the past week has been discussing a new type of contract which has been offered to the jobbers by a major refining company whose refinery is not located in the Mid-Continent but which markets the bulk of its gasoline output in the States of the Middle West in competition with Mid-Continent refiners. This contract guarantees the jobber a 3½ cents minimum and a 5-cent maximum under the tank wagon price prevailing at the point of delivery. The Oklahoma (Group 3) spot market as well as the local tank wagon is taken into consideration in determining the contract basis. The refiner guarantees the jobber a 3½-cent margin between the spot market and the local tank wagon regardless of how small the spread may become with the maximum of 5 cents. The freight rate to the point of delivery is, of course, not included in the minimum and maximum margins.

Proposed Contract

The actual workings of this contract can be more clearly explained by considering the present spot price with the Chicago tank wagon. Taking a spot price of 7 cents and adding 2.38 cents freight rate the delivery price would be 9.38 cents. Subtracting this from the tank wagon price of 14 cents and the 4.62 cents would represent the jobber's margin. Since this is under 5 cents the jobber would be allowed to buy from the refiner at the present spot market. If the tank wagon should be lowered 2 cents with no change in the spot market or if the spot market should be advanced 2 cents with no change in the tank wagon it can be seen that the margin would be reduced to 2.62 cents. In this event the refiner would lower his price to the jobber to guarantee the jobber the minimum margin of 3½ cents.

Several refiners who have been considering the contract are not opposed to it. Just what the reaction has been among the jobbers is not known. It will eliminate wide and small margins between the tank wagon and open market prices and if adopted by a majority of refiners would tend to stabilize the open market. In any event it represented the first definite step for a new type of contract and since it has been offered by a major refinery organization, other concerns will be forced to offer at least as an attractive proposition to the buyers.

The purchases of 60-62, 400 gasoline in Oklahoma and adjoining refining area last week about absorbed the material available for immediate shipment. Several refiners boosted their prices to 8¾

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REFINED MARKET BAROMETER

The improvement in the gasoline situation applying to the Middle West and Mid-Continent areas continued to feature developments in refined markets during the past week. Straight run gasoline prices are generally higher in those areas. The gasoline market is generally unsettled in other sections with lower prices prevailing in Pennsylvania and scattered reductions in California. Reports indicate a general weakness in kerosenes with reductions in some grades both in Pennsylvania and the Mid-Continent. Fuel, distillates and gas oils are generally strong and prices are higher where changes have occurred. Developments in lubricating oils are irregular with neutral prices lower in the Mid-Continent and the market soft along the West Coast. The demand for neutral is strong in the Gulf Coast and prices on most grades have been advanced. Wax easier.

Mid-Continent—Prices generally higher on all grades of straight run gasolines with strong domestic movement. Kerosenes weak and prices lower in Oklahoma and North Texas with no changes in other sections. Fuel oils strong especially in North Texas and Oklahoma where prices have been advanced for immediate delivery. Distillates, gas oils and blends unchanged. Neutral prices lower. Natural gasolines firm.

Atlantic Seaboard—Some improvement in gasoline situation due to exceptionally heavy gasoline consumption. Market still unsettled with no certainty that tank wagon prices will not be lowered again. Fuel oil steady with new contracts pointing to higher prices. Gas oil firm. Tendency toward softness in lubricants. Export market strong.

California—Domestic gasoline market unsettled with larger companies forced to lower prices to meet competition of smaller concerns. No change in export gasoline market. Absorption gasolines strong. Distillates and lubricating oils dull.

Pennsylvania—Gasoline prices again reduced. Kerosene soft and prices lower. Neutrals soft. Fuel oil strong. Wax offered more freely.

Gulf Coast—Brisk demand for neutrals and prices on several grades have been advanced ½ cent. Gas oil ¼ to ½ cent higher. No change in fuel oils.

Chicago—Favorable weather continues to add strength to gasoline market. Fuel oil strong and prices slightly higher. No changes in other products.

Fuel Oil Should Control Price of Crude

Petroleum Industry Undergoing Another Great Change With Gasoline Taking Second Place in Price Making

The unsatisfactory conditions which have prevailed in the petroleum industry for three years should be susceptible of an analysis which would disclose the controlling causes. Popular opinion has crystallized around two explanations—expansion and overproduction.

As to the first, there is, of course, too much capital invested both in producing as well as in refining and distributing facilities. That unnecessary and expensive duplication of distributing equipment exists is evident at almost every business corner and at most of the country crossroads. The illusion of easy money to be made in the oil business has brought an influx of people into all branches of the industry. Admitting expansion and excessive investment on this score, it is plain that this is not a fundamental weakness, but a transient phase which in the end will correct itself.

What about overproduction? The combined figures for the past three years show a total of production and imports of 2,400,000,000 bbls., against domestic consumption and exports of 2,158,000,000 bbls., showing an accumulation in storage of 242,000,000 bbls. This oil in storage, with its added cost of tankage and carrying charges is, of course, a heavy burden on the industry.

Another Main Cause

Nevertheless, giving due weight to these important considerations of expansion and overproduction, it would seem that neither nor both explain all the difficulties of the petroleum industry in the period through which we are passing. There must be some other underlying cause which has been generally overlooked by students of the situation in their efforts to complete a true diagnosis. If we can put a finger on this hidden cause, we may be in a fair way to a more intelligent treatment of our problems. With this object in mind, let us inquire into the reasons for the price fluctuations.

One is in a better position to appreciate what is happening in the industry today after a brief survey of its evolution in the past. This industry got its start because civilization demanded a better illuminant than sperm oil, tallow dips, or pine fagots. At first illuminating oil was the only commercial product of petroleum and the practically worthless naphtha content was a problem of disposal. The accidental discovery that a larger yield of lower boiling point oils, principally of the kerosene family, could be obtained by the application of the principle now known as "cracking" assisted the refiners in meeting a growing demand for kerosene without correspondingly increasing their crude runs.

The Advent of Gasoline

Later, the advent of the internal combustion engine brought about another change in the industry as revolutionary for that time as the one that occurred subsequently through the real development of the cracking process, although the significance of this change was at that time as little understood as are developments of the recent past. In the second stage of the petroleum industry gasoline became the dominant product. Crude oil was produced almost entirely for the gasoline it contained and hence this content determined its value. The increase in the production of naphtha bearing crudes and the application of the cracking principle to the manufacture of gasoline has duplicated the evolution of the kerosene era. To meet the requirements for gasoline one barrel of crude can now be made to do what formerly required from one and one-half to two barrels. The statistics of production of gasoline proportional to crude oil run through the refineries since pre-war days show that in 1914 this percentage of gasoline was 18.6. Since then it has steadily increased, until in 1923 it represented 31 per cent of the crude run. In this connection, the fact should not be overlooked that during the past two years there has been a percentage decline in the production of low gravity fuel crudes and an increase in percentage of light gravity high naphtha bearing crudes. Nearly all of the recent flush pools, including the southern California fields, have been relatively high in naphtha content.

Last year, and again in the early part of 1924, when the consumer demand for petroleum products was at its lowest, prices of crude oil advanced. Yet when the demand for these products revived, crude prices declined. This naturally raises the question as to whether such departures from the principles underlying utilization of other forms of raw materials are not at least in part responsible for the conditions that exist in the industry today.

The cracking process has brought the lesser valued products into competition with gasoline obtained by ordinary refining, a development which has been augmented by the recovery of gasoline from refinery, casinghead and natural gases. In short, the economic value of crude oil, which at first was directly related to the price of kerosene and afterward to the price of gasoline, would now seem to be dependent upon the price of fuel oil.

The cost of crude oil over the greater part of the past three years has been such as to make the cost of the natural gasoline recovered in excess of the cost of gasoline produced by cracking fuel oil. The natural outcome of this has been a multiplication of cracking facilities which has tended to enhance the value of fuel oil and depreciate that of gasoline. This statement is supported by the increased value of fuel oil today as compared to a year ago.

That we are now in a cycle of change from determining the value of crude oil by its gasoline content to that of determining its value by the cost of gasoline through cracking fuel oil is one of the main facts which apparently has not been comprehended by the industry at large.

The commercial use of cracking to produce gasoline started about 1912, and was accelerated by the demands for motor fuel during the last two years of the World War. The apparent shortage of petroleum in 1919, together with the wide spread between the market value of fuel oil and gasoline gave added impetus to the increased use of cracking processes. At the beginning of 1923, it is estimated that there were more than 2,000 cracking units in operation, with a potential annual charging capacity of approximately 175,000,000 bbls. of heavy oil, from which approximately 50,000,000 bbls. of gasoline per annum could have been produced. It is estimated that there will have been, by the end of 1924, an increase of at least 25 per cent in the cracking units and potential capacity.

Gasoline and Fuel Oil

The days of a spread of as much as 15 cents per gallon between the tank car market for gasoline and fuel oil appear to have passed. Whenever gasoline can be obtained from fuel oil at a cost lower than the natural gasoline in the crude, additional cracking facilities will be installed, and the tendency will be toward a reduction in the available quantity of fuel oil and an increase in the available amount of gasoline. A contraction in the supply of fuel oil will tend to enhance its value, whereas an increase in the quantity of gasoline will have the reverse tendency. It is evident, therefore, that in the future, there will be a much closer relationship between the market prices of these two products.

The statistics of consumption and exports, and an estimate of the value of all grades of finished products in 1923 are fairly representative of the conditions now existing. They show that while gasoline contributed 26 per cent to the consumption of petroleum products it accounts for 53 per cent of the money value of all products. On the other hand, fuel oil including crude oil sold as fuel, supplied 57 per cent of the product and yet represented but 26 per cent of the total value.

The industry has recognized for many years that in periods of overproduction the only channel through which it could obtain a quick and large market for its surplus was to sell oil in direct competition with coal. Being a volatile liquid, the great cost of storing it in large quantities against future requirements brings it into competition with coal as fuel—an obviously uneconomic alternative, through failure to realize the maximum intrinsic value from the raw product. Our reserve of coal are infinitely greater and more certain than our reserves of petroleum. If fuel oil becomes less available than it is today, there are few of its present uses for which coal could not be substituted. These exceptions do not include the generation of power, either on land or at sea, except in the case of Diesel motor-driven ships, war vessels and fast passenger steamers of the Leviathan class. The other uses in which price is not the controlling factor are enriching coal gas for domestic use, glass manufacturing, special steel manufacturing and the like. Fuel oil will in all probability be always in demand for these special purposes and the required quantities will be available in the form of fuel crude and residue from the refining and cracking operations.

Return on Fuel Oil

The measure of the displacement of fuel oil for power purposes by coal would, therefore, seem to be entirely dependent upon the extent to which the price of

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WHAT IS WRONG WITH THE INDUSTRY?

Striking points in the statement published herewith of the Standard Oil Company (New Jersey), which will appear in the forthcoming issue of "The Lamp," the official organ of the company, follow:

The economic value of crude oil, which at first was directly related to the price of kerosene and afterward to the price of gasoline, would now seem to be dependent upon the price of fuel oil.

That we are now in a cycle of change from determining the value of crude oil by its gasoline content to that of determining its value by the cost of gasoline through cracking fuel oil is one of the main facts which apparently has not been comprehended by the industry at large.

The producer whose costs are such as to enable him successfully to compete on a price basis with coal is entitled to this market outlet, but the return to the producers of crude who force this competition can only be on the basis of value determined by the value of coal.

If overproduction of crude makes it necessary for the industry to sell petroleum in the form of fuel oil in competition with coal then there can be no question but that the consumer of gasoline will participate in the lower value so established.

Production from a new pool which creates a surplus above the total consumption, or in excess of the industry's ability to finance and store, should in the ordinary operation of trade, exert such depreciation of prices as to stimulate consumption to the necessary level in the process of correcting the condition of oversupply.

May not the unsuspected but controlling cause of present difficulties in the industry be the fact that it has not recognized the evolution that has been gradually taking place from gasoline to fuel oil as the controlling product?

If this is the true explanation, then the much hoped for return to normalcy within the industry will be hastened by general recognition of the fact that fuel oil under conditions as they exist today, is the product that governs the market price for crude and its products.

AMERICAN PETROLEUM INSTITUTE TO MEET IN FORT WORTH, DEC. 9

NEW YORK, Oct. 21.—Directors of the American Petroleum Institute, at meeting held here yesterday, voted to hold the fifth annual meeting at the Texas Hotel, Fort Worth, Texas, the second week in December. Strong representations were made by California for the meeting but the directors believed in view of business pressure, that a more central location was desirable. The meeting will probably begin December 9 and extend through three or four days.

The program has not yet been decided and is in the hands of the program committee. Group sessions will be held on topics of standardization, utilization of fuel, transportation, statistics, accounting, and motor fuel research.

The directors adopted a plan for organization of a division of standardization of the Institute, creating a general committee and special committees along lines already organized to carry on work of standardization of oil field equipment. They also adopted the final recommendation of the special committee establishing dimensional standards of cable drilling tool joints and also the final recommendation of the committee on specification for steel and iron pipe for oil country tubular goods. This is the first action taken by the directors of the Institute approving standardization and marks the beginning of practical application of standardized equipment in the oil fields. In connection with standardization the board adopted an official monogram to appear on all standards and specifications made by the Institute.

Next Decade May Be Era of Fuel Oil

Increasing Competition With Coal Alarming British Mine Interests Who Are Turning to Carbonization to Meet it

By N. O. Fanning

NEW YORK, Oct. 20.—Frank Hodges, Civil Lord of the Admiralty of Great Britain, and late secretary of the Coal Miners' Union, is quoted as saying that the demand for British coal soon would collapse unless carbonizing methods were introduced to meet the competition of oil. Collapse of the British coal industry would be extremely serious to Great Britain, for coal is the base and the backbone of British commerce. The British freighter has had a tremendous advantage over the marine carrier of other nations because it always could depend on getting a coal cargo out from Great Britain.

British manufacturers also have had the benefit of better fuel and usually cheaper fuel than their competitors. Normally the British coal trade employs about 1,000,000 men. In no other place in the world are great coal deposits situated so advantageously for trade and transportation as in Wales and western England. The mines are almost at the side of the sea and production costs are minimized to a pronounced degree.

A parallel to this situation with relation to oil exists in the United States. The largest oil deposits are within comparatively easy reach of the Gulf and Pacific Coasts, thanks partly to cheap pipe line transportation. The fact that the production of crude oil has exceeded consumption for a period of about six years has resulted in cheap oil and has made oil a serious competitor to coal all over the world.

The largest oil companies have been putting more emphasis on fuel oil sales, including the maritime and land markets. Wherever coal is used, oil has been introduced, supplanting it in various degrees. Consumption of fuel oil throughout the world is approximately 1,000,000 barrels daily, which is equivalent to about 143,000 tons of coal. This represents the displacement of approximately that amount of coal in the markets.

Fuel Oil in Future

Events of the last few years, and indications for the future, point to the next decade as the era of fuel oil. The realization of this depends of course on factors which may or may not materialize, including the situation affecting supply and demand of oil and supply and demand of coal. But consider the trend of oil developments:

(1 Continued excess of oil supply over demand, indicating need for development of outlet for surplus production.

(2) Development of big oil fields near seacoast, especially in California.

(3) Concentrated development of foreign oil fields, especially those of Venezuela, Peru, Colombia, Persia and the Dutch East Indies, in the face of the current overproduction.

If fuel oil continues to supplant coal in increasing proportion the United States promises to become the world's fuel center, which, if taken advantage of properly, will give America a commercial ascendance never before dreamed of. A shortage of oil would seriously endanger the possibility of such a development, and therefore it is evident it will be avoided. One way it can be avoided is by the development in advance of new fields to replace those which are likely to become exhausted. That the leading oil companies and small wildcatters are doing this is generally known, but with what success no one can predict.

Fuel oil is now selling on a basis on which it can compete with coal. In the opinion of conservative marketers it cannot sell higher and still compete, except in rare circumstances. The ability to sell fuel oil on a basis which will allow it to compete with coal depends on an always adequate crude supply.

Effect on Oil Industry

This leaning toward fuel oil on the part of world commerce is likely to have a revolutionary effect on the oil business. The accompanying chart shows the growth in consumption of fuel and gas oil from January, 1921, to June, 1924, inclusive. It shows a steady, unseasonable growth, with the result that consumption, including exports, reached a record in June of 964,000 barrels daily.

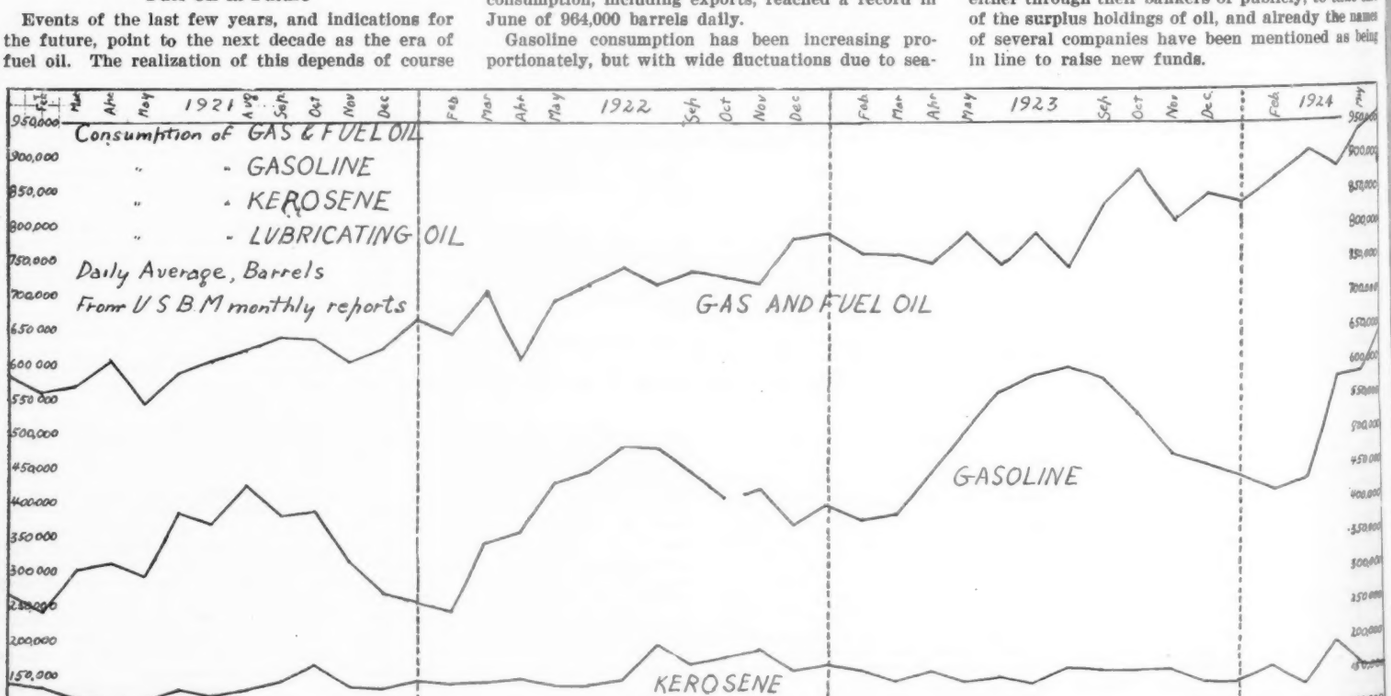
Gasoline consumption has been increasing proportionately, but with wide fluctuations due to seasonal conditions. The record consumption during the period was in June, 1924, and averaged 670,000 barrels. But in January consumption averaged only 438,000 barrels, while consumption of fuel oil averaged 835,000 barrels.

In depending on gasoline, the oil industry has been subject to intermittent periods of hope and despair, and with prices of that product steadily declining has looked for some other post on which to lean. Until that post is uncovered, the oil business will probably not enjoy real prosperity. The large consumption of fuel oil offers relief if it can be sold on a profitable basis. That means, perhaps, low prices for crude oil rather than high prices for fuel oil.

To summarize, the movement toward the use of fuel oil to displace coal may be of tremendous importance to the United States, so long as American fields continue to supply the bulk of the world's crude petroleum.

Financing Surplus Oil

In addition to the large quantities of refined oil products now being carried in storage by the oil companies in the United States the industry is entering the winter months with approximately 500,000,000 barrels of crude oil and "tops." The value of the crude oil alone, it has been estimated, is equal to about 25 per cent of the entire working capital of the industry, a proportion which has been characterized as economic. The question of financing this huge surplus over the long period of curtailed consumption, especially as regards gasoline, the mainstay of the industry, is viewed as a rather serious matter. General opinion in banking and trade circles is that the larger companies will have little difficulty in carrying over these stocks. In fact, it has been pointed out, some of the larger companies will not need to resort to new financing to carry the "load." It is expected, however, that some of the smaller companies will have to arrange loans either through their bankers or publicly, to take care of the surplus holdings of oil, and already the names of several companies have been mentioned as being in line to raise new funds.



Will America Come to Mining for Oil

Methods Employed at Pechelbronn and Wietz Contrasted With Conditions to Be Encountered Here. Dangerous and Difficult

By W. A. J. M. van Waterschoot von der Gracht

At the present rate of production of approximately 2,000,000 bbls. of crude oil daily, we deplete our oil reserves, as now conceived, at a rate of at least 60,000 acres per year, taking the average ultimate yield per acre of our American oil fields, through wells, at 10,000 bbls., which seems very high, indeed, for an average. Every producer can easily imagine for himself how much 60,000 acres of producing oil lands, at 10,000 bbls. an acre, mean in the industry. The present great rate of production, which may be maintained yet for a few years, does not in the lease influence this ultimate result, except that it is bound to hasten the end. Geology has made so much progress, and the discovery of new oil fields has recently become so much easier, that this fact explains the present high rate of production, but regardless of these successes of exploration, comparatively little really new oil territory has been opened up lately, meaning oil fields situated in regions where the presence of oil had not been suspected so far, and which consequently would materially increase the estimates of unmined reserves present in the United States. New territory and disappointing assumed oil regions about balance.

Underground Reserve

This does not mean that in the near future it will not be possible to produce very large quantities of petroleum in this country. The above facts only apply to crude oil which can be obtained from wells, drilled and produced by methods in use at present. We know that wells can only extract a small percentage, scarcely ever exceeding 25 per cent of the total amount of crude which is present in an oil sand; 75 per cent or considerably more remains in the sand and cannot be extracted through wells. This 75 per cent consequently means an enormous underground reserve for the production of which, however, new methods have to be devised.

In addition to this, there are the vast reserves of bituminous products, which occur in shale deposits, which seem practically inexhaustible. Furthermore, liquid fuels and motor spirits can be obtained from coal, and especially from highly bituminous lignites. All these, however, are more expensive processes than production from flowing and even pumping wells.

In consequence there is little danger that we will ever be actually short of petroleum products and liquid fuels in general, but I feel absolutely certain that in the comparatively near future we will have to look around in the United States for obtaining our petroleum from other sources, in addition to oil wells, and also that we will have to pay the price.

Oil Mining Very Old

On a small scale, mining for tar, ozokerite and even crude petroluem has already been practiced in various European and Asiatic countries for a long, long time. We still find such small oil shafts in Rumania, in Baku, in Burma, in Japan, in Mesopotamia and Persia; in the Elsaz this industry was known as early as 1785. It all was done on a very small and crude scale, however, and the production of such oil "mines" did not cut any figures in the industry. Under the stress of war conditions, however, very modern mining methods were applied by the Germans in the two only oil fields available within that country, at Wietze near Hanover, and at Pechelbronn in the Elsaz. This latter locality has become French territory again since the Peace Treaty, and the mines are now operated by the French.

Very valuable information has been obtained in those mines, which will no doubt interest you. They have given us data regarding the enormous amounts of crude oil which can thus be obtained, exceeding considerably the total amount of oil which the wells had ever produced from the sand during the lifetime of its normal exploitation. Where the wells ultimately yielded only from 20 per cent to 25 per cent of the original contents of the oil sand, it has now been shown that in mines it is possible to obtain from 65 per cent to 70 per cent more, or consequently almost all the oil which was left. In the tunnels and stopes of these oil mines, extremely valuable information has furthermore been obtained concerning the composition, variability and saturation of oil sands, and the action of wells, information which is not only of importance for the oil miner, but also most instructive for anybody who is producing oil through wells.

Difficult and Dangerous

In both the mines at Weitze and Pechthese mines have also made us familiar with the immense difficulties which await anybody who is bold enough to enter these oil sands, and drive underground workings into them. Here problems and danger await him, compared to which the old familiar dangers of the coal mines, with their fire-damp, sink into nothing.

It is evident, of course, from the start, that underground mining will be absolutely impossible for a great number of our oil fields, because the oil sands lie either too deep, or the ground is too loose and unconsolidated, or the presence of immense volumes of artesian salt water would baffle every pumping capacity. There exist, however, considerable areas, notably in the Appalachian oil fields, and also in eastern Oklahoma and Kansas, where the oil sands occur at moderate depths, in well consolidated Peleozic formations and are free from water in excessive quantities or under too great pressure. In many of these the condition of the ground promises to be much better adapted to mining than at Wietze or Pechelbronn, where the mines operate in Tertiary deposits which are only partly consolidated. The danger from explosive vapors, however, promises to be considerably greater in these American deposits, because the present European mines operate in sands; the petroleum contents of which scarcely contain any gasoline; oil fields which only produce a very heavy crude.

Draining the Crude

In both the mines at Wentze and Pechelbronn it was originally planned to mine the oil sands like a coal seam in a coal mine, and to treat it at the surface in a mining apparatus with hot water. Experiments had shown that these sands easily break up, when agitated with water at 80 degrees Centigrade, the slush readily separating into oil, water and sand.

As soon, however, as the shafts reached the oil sand, and tunnels had begun to be driven into same, it immediately appeared that the oil seeped out so freely from these sands, which were considered exhausted as far as pumping wells were considered, that for a considerable time it would be best to abstain from any stoping out of the sand, except in tunnels and drives, because an amount of crude could thus be drained, which would considerably exceed the total yield of the wells which had formerly been operated. Moreover, this crude was practically of the same quality as that which was originally obtained from the wells. For the present, therefore, these mines confine themselves to driving a network of drainage tunnels in the sand, gathering the oil which seeps out, and taking it to the shaft in either pipe lines or flumes, where finally it is pumped to the surface. They actually wash the sand which is obtained in driving these tunnels.

Similar to Seepage

It soon became evident that this seepage of oil into the tunnels acts more or less similarly, as formerly its seepage into the oil wells. For every spot of sand, thus opened by a drainage tunnel, the seepage shows a regular decline. Consequently, the tunnels must be kept continuously advancing into the sand. On the fresh face the oil then seeps out from the lower portion of the sand, of which on an average only the basal 20 or 25 inches yields petroleum. As the face of the tunnel advances, the zone of seepage behind the face gradually becomes lower, whilst the quantity of oil yielded decreases. The rate of decline varies; in some instances active seepage lasts only for a few days; sometimes it keeps up for weeks, and rarely for a few months; a very small seepage continues for years but is of no commercial importance. At Pechelbronn they found that, when keeping the face of the tunnel advancing reglarly, they obtained an average of about 20 to 25 bbls. of seepage oil from each foot the face advances, whilst in addition they save about 4 bbls. from the sand washed for each foot advanced. This is for tunnels with a section of 45 square feet.

The face of the tunnels, under ordinary conditions, advances at an average rate of 15 feet daily, if worked with three shifts.

The sand worked at Pechelbronn has a thickness of from 7½ to 9 feet, and dips regularly at an angle of from 5 to 8 degrees. The three mines now operating at Pechelbronn work the sands at depths of 450, 600 and 750 feet.

Mining in Germany

At Wietz they work two oil sands at a depth of around 750 feet. As the sands are rather soft, the tunnels apparently advance slower than at Pechelbronn; here the daily progress of the face averages only 6 feet. Here they found that the "exhausted" sand still contained 42 per cent of oil. They claim that the tunnels drain 61 per cent, whilst the old wells had only obtained 25 per cent of the original contents.

In both oil fields a fair amount of gas is still present in the sand. Where the oil seeps, it comes out with tiny gas bubbles, and also the higher dry portion of the oil sand, which does not seep oil, yields gas all the time, as shown immediately by innumerable tiny bubbles when this part of the face is wetted with oil. This gas, and especially the gasoline vapors it contains, or which it takes up further from the evaporation of oil in puddles or in open flumes, is one of the gravest dangers in oil mining.

From the shafts at Pechelbroon they drove tunnels along the strike of the sand, the lower one connected by inclines with the upper tunnel. Occasionally old wells encountered were made use of for ventilation, or other purposes of safety.

The working face of the tunnel collects the seepage oil but at variable, but never very great distance behind the face, seepage practically ceases. The oil is carried to pumps by gravity flumes and hence sent to the shafts.

The sand is firm on a fresh face and has to be mined with the pick. The use

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OIL FIELD FRANCE REGAINED IN WAR IS BEING CAREFULLY TREASURED

By Paul A. Ehrhardt

Pechelbronn Societe Anonyme d'Exploitations Minieres, Strasbourg, France

Unfortunately, at present, France has only a very small and unimportant place among the oil producing countries of the world. I hope this will be improved some time in the future. As to our needs in petroleum products, we are in France today dependent to a very large extent on your country, which leads the world in producing and refining oil. Therefore, this Exposition and Congress is of a special interest to French oil companies and petroleum engineers as it gives them an opportunity to keep in touch with the American oil industry and its constant improvements and progresses.

Petroleum has become such an important and influential factor in economical and political life as well as in the defense of a nation that no country can afford to overlook it. In France we are paying much attention to the petroleum question.

The Pechelbronn oil field, the sole producing area in France at the present, which had at the end of the World War a yearly production of 350,000 bbls., will produce this year over 600,000 bbls.

Many French oil companies are actively and successfully producing and refining oil in foreign countries, especially in Poland and Rumania.

The French Government is spending yearly a large amount of money for prospecting and wildcatting purposes in Continental France and its Colonies. Various wells have been drilled in the last few years in central and southern France. So far no oil in commercial quantities has been found but much interesting information has been obtained, and in many of the wells sands were encountered that carried shows of oil and gas.

A good deal of exploration has also been done in Algeria, Tunisia and Morocco. However, the French Geological Survey believes Madagascar the most favorable region of our possessions.

French Petroleum Institute

In 1919 a National Petroleum Institute was organized at the University of Strasbourg for the purpose of training petroleum engineers for the different parts of the oil industry. This institute has attained success. Among the students of last year there were two Americans.

In mentioning the French Petroleum Institute I wish to convey to the Board of Governors the sincere regrets of Prof. Henry Gault, who is unable to attend this meeting. The placing of Professor Gault, director of the institute, on the Board of Governors of this great International Oil Congress was very much appreciated in France.

That we are keenly and intensely interested in the petroleum question is also shown by the fact that every year young French engineers are visiting the States to become familiar with the modern producing and refining methods in the American oil industry. Various French companies are represented this year at this Exposition by engineers who have gained their practical experience in your country. They have been greatly aided

(Continued on Page 68)

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

CHICAGO DIST. (Based on Group 3)—	Oct. 21		Oct. 14		Oct. 7	
50-52 450 end point (Naphtha)	.06¼	.06½	.06¼	.06½	.06¼	.06½
56-58 450 end point	.06¼	.06½	.06½	.06¾	.06¼	.06½
58-60 437 end point (U. S. Motor)	.07	.07¼	.06¾	.07	.06½	.06¾
60-62 400 end point	.08¼	.08½	.08	.08¼	.08¼	.08½
64-66 375 end point	.09¼	.09½	.08¾	.09	.09	.09¼
68-70 360 end point	.10¼	.10½	.10	.10¼	.10	.10¼
OKLAHOMA (Group 3)—						
50-52 450 end point (Naphtha)	.06¼	.06½	.06¼	.06½	.06¼	.06½
56-58 450 end point	.06½	.06¾	.06½	.06¾	.06¼	.06½
58-60 437 end point (U. S. Motor)	.07	.07¼	.06¾	.07	.06½	.06¾
60-62 400 end point	.08½	.08¾	.08	.08¼	.08	.08¼
64-66 375 end point	.09¼	.09½	.09	.09¼	.09	.09¼
68-70 350 end point	.10¼	10½	.10	.10¼	.10	.10¼
KANSAS—						
58-60 437 end point (U. S. Motor)	.07	.07¼	.06¾	.07¼	.06½	.07
NORTH TEXAS—						
48-52 450 end point (Naphtha)	.06¼		.06¼		.06	.06¼
50-52 440 end point (Naphtha)	.06¼	.06½	.06¼	.06½	.06¼	.06½
56-58 450 end point	06½	.06¾	.06¼	.06⅝	.06⅛	.06¼
58-60 437 end point (U. S. Motor)	.07		.06⅝	.06¾	.06⅜	.06⅝
60-62 400 end point	.08¼	.08½	.07¾	.08	.08	
64-66 390 end point	.08¾	.09	.08½	.08¾	.08½	.08¾
64-66 375 end point	.09	.09¼	.08¾	.09	.08¾	.09
68-70 360 end point	.10		.09¾	.10	.09¾	.10
NORTH LOUISIANA—						
56-58 450 end point	.07		.06¾	.07	.06½	.06¾
58-60 437 end point (U. S. Motor)	.07¼	.07½	.07	.07¼	.06¾	.07
60-62 400 end point	.08¾	.09	.08½	.08¾	.08½	.08¾
64-66 390 end point	.09¼	.09½	.09¼		.09	.09¼
64-66 375 end point	.09½	.09¾	.09¼	.09½	.09¼	.09½
ARKANSAS—						
58-60 450 end point	.07		.06¾	.07	.06¾	.07
58-60 437 end point (U. S. Motor)	.07¼	.07½	.07	.07¼	.07	.07¼
64-66 375 end point	.09½	.09¾	.09¼	.09½	.09¼	.09½
ROCKY MOUNTAIN STATES—						
*58-60 437 end point (U. S. Motor)	.10	.10¼	.10	.10¼	.09¾	.10¼
PENNSYLVANIA—						
52 Naphtha	.09		.09½		.10¼	
54 Naphtha	.09		.09½		.10¼	
56 Gasoline	.09½		.09½		.10¼	
58 Gasoline	.09¾		.10		.10½	
60 Gasoline	.10½		.10½		.11¼	
62 Gasoline	.11¼		.11¼		.11¾	
64 Gasoline	.11¾		.11¾		.13¼	
66 Gasoline	.15¼		.15¼		.15½	
68-70 Gasoline	.17		.17		.17¼	
CALIFORNIA—						
54-56 437 end point (U. S. Motor) domestic	.11	.12	.11	.12	.11	.12

*Colorado points.

NATURAL GASOLINE

CHICAGO DIST. (Based on Group 3)—	Oct. 21		Oct. 14		Oct. 7	
Grade Double A, 80-87.9 375 e.p., rec. 90%	.08	.08¼	.08¼	.08½	.08¼	.08½
Grade A, 72-79.9, 375 end point, rec. 90%	.08	.08¼	.08¼	.08½	.08¼	.08½
Grade Double B, 84-92, 375 e.p., rec. 85%	.07¾	.08	.08	.08¼	.08	
Grade B, 76-83.9, 375 end point, rec. 85%	.07¾	.08	.08	.08¼	.08	
Grade C, 80-90. 375 end point, rec. 78%	.07¼	.07½	.07¾	.08	.07¾	.08
OKLAHOMA (Group 3)—						
Grade Double A, 80-87.9, 375 e.p., rec. 90%	.08	.08¼	.08	.08¼	.08	.08¼
Grade A, 72-79.9, 375 end point, rec. 90%	.08	.08¼	.08	.08¼	.08	.08¼
Grade Double B, 84-92, 375 e.p., rec. 85%	.07¾	.08	.07¾	.08	.07¾	.08
Grade B, 76-83.9, 375 end point, rec. 85%	.07¾	.08	.07¾	.08	.07¾	.08
Grdae C, 80-90. 375 end point, rec. 78%	.07¼	.07½	.07¼	.07½	.07½	.07¾
NORTH TEXAS—						
Grade Double A, 80-87.9, 375 e.p., rec. 90%	.08		.08		.08	.08¼
Grade A, 72-79.9, 375 end point, rec. 90%	.08		.08		.08	.08¼
Grade Double B, 84-92, 375 e.p., rec. 85%	.07¾		.07½	.07¾	.07¾	
Grade B, 76-83.9, 375 end point, rec. 85%	.07¾		.07½	.07¾	.07¾	
Grade C, 80-90. 375 end point, rec. 78%	.07	.07½	.07	.07½	.07½	.07¾
NORTH LOUISIANA—						
Grade B, 76-83.9, 375 end point, rec. 85%	.08¼	.08½	.08¼	.08½	.08¼	.08½
Grade C, 76-82. 375 end point, rec. 85%	.07½	.07¾	.07¾	.08	.08	.08¼
CALIFORNIA—						
68-80 absorption 360-390 end point	.10½	.11	.10¼	.11	.10¼	.11
78-84 compression, 350 end point	.13		.13		.13	

MOTOR NATURAL GASOLINE (BLEND)

CHICAGO DIST. (Based on Group 3)—	Oct. 21		Oct. 14		Oct. 7	
68-70 437 end point	.07	.07¼	.06¾	.07	.07	.07¼
60-62 450 end point	.07	.07¼	.06¾	.07	.07	.07¼
64-66 450 end point	.06¾	.07	.06¾	.07	.07	.07¼
OKLAHOMA (Group 3)—						
60-62 450 end point	.07		.06¾	.07	.06½	.06¾
64-66 437 end point	.07¼		.07	.07¼	.07	.07¼
68-70 430-435 end point	.07¼		.07	.07¼	.07	.07½
NORTH TEXAS—						
58-62 440 end point	.06¾	.07	.06½	.07	.06½	.06¾
58-60 450 end point	.06¾	.07	.06½	.07	.06½	.06¾
PENNSYLVANIA—						
*60-62	.10½		.10½		.11	
*64-66	.10½		.10½		.11	
*66-68	.10½		.10½		.11	
*68-70	.10½		.10½		.11	

*At Sistersville, W. Va.

BURNING OIL

CHICAGO DIST. (Based on Group 3)—	Oct. 21		Oct. 14		Oct. 7	
41-43 water white Kerosene	.04¾	.05	.04¾	.05	.04⅞	.05⅛
42-44 water white Kerosene	.04⅞	.05⅛	.04⅞	.05⅛	.05⅛	.05¼
NORTH LOUISIANA—						
41-43 prime white Kerosene	.05	.05⅛	.05	.05⅛	.05	
42-44 water white Kerosene	.05¼	.05⅜	.05¼	.05⅜	.05¼	.05⅝
KANSAS—						
41-43 water white Kerosene	.05		.05	.05⅛	.05	.05⅛
ROCKY MOUNTAIN STATES—						
*40-42 water white Kerosene	.08¼	.08½	.08¼	.08½	.08¼	.08½
NORTH TEXAS—						
41-43 water white Kerosene	.04½	.04¾	.04⅝	.04¾	.04⅝	.04⅞
41-43 prime white Kerosene	.04¼	.04½	.04⅜	.04½	.04⅜	.04⅝
40-42 prime white Kerosene	.04¼	.04½	.04⅜	.04½	.04⅜	.04⅝
42-44 prime white Kerosene	.04¾	.05	.04¾	.05	.04¾	.05
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.04⅝	.04¾	.04¾	.04⅞	.04⅝	.04⅞
42-44 water white Kerosene	.04⅞	.05	.04⅞	.05⅛	.04⅞	.05¼
41-43 prime white Kerosene	.04½	.04⅝	.04½	.04⅝	.04½	.04⅞
ARKANSAS—						
41-43 water white Kerosene	.05	.05¼	.04⅞	.05	.04⅞	.05
42-44 water white Kerosene	.05¼	.05½	.05	.05⅛	.05	.05¼
PENNSYLVANIA—						
43 Kerosene prime white	.07		.07¼		.07½	
45 Kerosene water white	.07¼		.07½		.07½	
46 Kerosene water white	.07¾		.08		.07¾	
47 Kerosene water white	.08		.08¼		.08	
34 Neutral	.09		.09		.09	
34 Sundebloomed Neutral	.07¾		.07¾		.07¾	
36 Miners' Neutral	.06½		.06½		.06½	
300 Mineral Seal	.07½		.07½		.07½	
CALIFORNIA—						
40-42 water white (high burning test)	.07½	.08	.07½	.08	.07⅝	.08
Engine distillate, 43-45 445 end point	.08½	.09	.08½	.09	.08½	.09
Engine distillate, 42-44 480 end point	.07½	.07¾	.07½	.07¾	.07½	.07¾

*Colorado points.

FUEL OILS

CHICAGO DIST. (Based on Group 3)—	Oct. 21		Oct. 14		Oct. 7	
24-26 Fuel Oil (sellers' Group 3)	.85		.90	.95	.90	.95
22-24 (El Dorado)	.90	.95	.90	.95	.90	.95
18-20 (Smackover)	.92½	.97½	.92½	.97½	.09	.95
32-36 Gas Oil	.02¾	.03	.02¾	.03	.02¾	.03
38-40 Straw distillate	.03¾	.04	.03¾	.04	.03¾	.04
KANSAS—						
24-26 Fuel Oil	1.05	1.10	1.05	1.10	1.05	1.10
32-36 Gas Oil	.03⅛	.03¼	.03⅛	.03¼	.03⅛	.03⅛
38-40 Distillate	.03¾	.04	.03⅝	.03¾	.03⅝	.03⅝
OKLAHOMA (Group 3)—						
22-26 Fuel Oil (sellers' cars)	.90	.92½	.87½	.90	.90	
24-26 Fuel Oil (buyers' cars)	.90	.92½	.87½	.90	.87½	.92½
24-26 Fuel Oil (sellers' cars)	.92½	.95	.90	.95	.90	.95
28-30 Fuel Oil (sellers' cars)	1.00	1.05	1.00	1.05	1.00	1.05
32-36 Gas Oil	.02⅞	.03	.02⅞	.03	.02¾	.03
38-40 Straw distillate	.03¾	.03⅞	.03¾	.03⅞	.03⅝	.03⅞
NORTH TEXAS—						
24-26 Fuel Oil (sellers' cars)	.92½	.97½	.90	.95	.92½	.97½
26-30 Fuel Oil	1.05		1.00	1.05	1.05	
32-36 Gas Oil	.02¾	.03	.02¾	.03	.02¾	.03
36-38 Gas Oil	.03¼		.03¼		.03¼	
38-40 Straw distillate	.03¾	.03⅞	.03⅝	.03¾	.03½	.03⅝
NORTH LOUISIANA—						
20-22 Fuel Oil	1.00		.95	1.00	.95	1.00
32-36 Gas Oil	.03⅛	.03¼	.03⅛	.03¼	.03⅛	.03⅛
36-40 Light Straw distillate	.03⅝	.03¾	.03⅝	.03¾	.03⅝	.03⅝
ARKANSAS—						
38-40 Distillate	.03¾	.04	.03¾	.03¾	.03¾	.04
32-36 Gas Oil	.03	.03¼	.03	.03¼	.03	.03¼
22-26 Refinery Fuel Oil	.95	1.00	.95	1.00	.95	1.00
GULF COAST (South Texas)—						
Gas Oil	.04½	.05	.04	.04½	.03¾	.04
Fuel Oil	1.50	1.60	1.50	1.60	1.50	1.60
PENNSYLVANIA—						
30-34 Fuel Oil	.05		.05		.05	
36-40 Fuel Oil	.05¼		.05¼		.05¼	
CALIFORNIA—						
33-36 Distillate	.04	.04½	.04	.04½	.04	.04½
27-33 Distillate	.03¾	.04	.03¾	.04	.03¾	.04
15-20 Fuel Oil (at tide water)	1.40		1.40		1.40	

NEUTRAL OILS

OKLAHOMA (Group 3)—	Oct. 21		Oct. 14		Oct. 7	
70-80 vis., 2½ color, 20-25 cold test	.04	.04½	.04	.04½	.04	.04½
100 vis., 2 color, 20-25 cold test	.04½	.05	.05	.05½	.05	.05½
100 vis., 3 color, 20-25 cold test	.04	.04½	.04½	.05	.04½	.05
150 vis., 3 color, 20-25 cold test	.07	.07½	.08	.09	.08	.09
150 vis., 4 color, 20-25 cold test	.06½	.07	.08	.08½	.08	.08½
180 vis., 4 color, 23-28 cold test	.08	.08½	.09	.09½	.09	.09½
180 vis., 3 color, 23-28 cold test	.08½	.09	.09½	.10	.09½	.10
200 vis., 3 color, 23-28 cold test	.10	.10½	.11½	.12	.11½	.12
200 vis., 4 color, 23-28 cold test	.09½	.10	.11	.11½	.11	.11½
220 vis., 3 color, 25-30 cold test	.11½	.12	.12½	.13	.12½	.13
220 vis., 4 color, 25-30 cold test	.10¾	.11½	.11¾	.12¼	.11¾	.12¾
240 vis., 3 color, 25-30 cold test	.13½	.14	.14½	.15	.14½	.15
240 vis., 4 color, 25-30 cold test	.12¾	.13¼	.14	.14½	.14	.14¾
280 vis., 3 color, 25-30 cold test	.16½	.17	.16½	.17	.16½	.17
280 vis., 4 color, 25-30 cold test	.15	.15½	.15½	.16	.15½	.16
Red Neutrals:						
180 vis., 5 color, 23-28 cold test	.07½	.08	.08½	.09	.08½	.09
180 vis., 6 color, 23-28 cold test	.12¼	.12¾	.12¼	.12¾	.12¼	.12¾
200 vis., 5 color, 23-28 cold test	.09	.09½	.10½	.11	.10½	.11
200 vis., 6 color, 23-28 cold test	.13	.13½	.13	.13½	.13	.13½
220 vis., 5 color, 25-30 cold test	.10	.10½	.11	.11½	.11	.11½
220 vis., 6 color, 25-30 cold test	.14¼	.14¾	.14¼	.14¾	.14¼	.14¾
240 vis., 5 color, 25-30 cold test	.12	.12½	.13	.13½	.13	.13½
240 vis., 6 color, 25-30 cold test	.15¼	.15¾	.15¼	.15¾	.15¼	.15¾
280 vis., 5 color, 25-30 cold test	.13½	.14	.14¼	.15	.14¼	.15

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

180-200 vis., S. R. green, 40-45 cold test	.07	.07½	.07	.07½	.07	.07½
190-200 dark green, 40-45 cold test	.06	.06½	.06	.06½	.06	.06½
170-190 dark green, 40-45 cold test	.05¾	.06	.05¾	.06	.05¾	.06
600, E filtered	.20	.21	.20	.21	.20	.21
190-200 vis. @ 210 "D" Bright Stock	.34					
200-210 vis. @ 210 "E" Bright Stock	.29					
150 vis. @ 210 "D" Bright Stock	.30					
150 vis. @ 210 "E" Bright Stock	.26					
Waxes:						
124-126 White Crude Scale Wax	.05¼	.05½	.05¼	.05½	.05¼	.05½
PENNSYLVANIA—						
150, 3 color	.16½		.16½		.16½	
180, 3 color	.18½		.18½		.18½	
200, 3 color	.21		.20½		.20½	
220, 3 color	.23		.22½		.22½	
600, steam refined	.19		.19		.19	
635, steam refined	.23		.23		.23	
650, steam refined	.24½		.24½		.24½	
600, Pennsylvania flash	.28		.28		.28	
630, Pennsylvania flash	.33		.33		.33	
*550 E, filtered	.19¼		.19¼		.19¼	
*600, E filtered	.23½		.23½		.23½	
600, E filtered	.22½		.21½		.21½	
600, D filtered	.28		.28		.28	
550, E filtered	.20		.20		.20	
550, D filtered	.24		.24		.24	
Pennsylvania Bright Stock	.35		.35		.35	
†122-124 White Crude Scale Wax	.05¾		.05¾		.05¾	
*122-124 White Crude Scale Wax	.05⅞		.05⅞		.05⅞	

*At Warren, Pa. †At New York City.

GULF COAST (South Texas)—						
Zero Black	.06½	.07	.06	.07	.06	.07
No. 2 color, 100 vis., pale oil	.08½	.09½	.08	.09	.08	.09
No. 2 color, 150 vis., pale oil	.10½	.11½	.10	.11	.10	.11
No. 3 color, 200 vis., pale oil	.12½	.13½	.12	.13	.12	.13
No. 3 color, 300 vis., pale oil	.15	.16	.14½	.15½	.14½	.15½
No. 3½ color, 500 vis., pale oil	.17	.18	.16½	.17½	.16½	.17½
No. 3½ color, 750 vis., pale oil	.22½	.23½	.22	.23	.22	.23
No. 4½ color, 1200 vis., pale oil	.24½	.25½	.24	.25	.24	.25
No. 4½ color, 2000 vis., pale oil	.29½	.30½	.29	.30	.29	.30
No. 1½ color, 150 vis., pale filtered	.21½	.22½	.21	.22	.21	.22
No. 2 color, 200 vis., pale filtered	.22½	.23½	.22	.23	.22	.23
No. 3 color, 300 vis., pale filtered	.25½	.26½	.25	.26	.25	.26
No. 3½ color, 500 vis., pale filtered	.30½	.31½	.30	.31	.30	.31
No. 3½ color, 750 vis., filtered	.40½	.41½	.40	.41	.40	.41
No. 5 to 6 color, 200 vis., red oil	.11	.12	.10½	.11½	.10	.11
No. 5 to 6 color, 300 vis., red oil	.13½	.14½	.13	.14	.13	.14
No. 5 to 6 color, 500 vis., red oil	.15	.16	.14½	.15½	.14½	.15½
No. 5 to 6 color, 750 vis., red oil	.19½	.20½	.19	.20	.19	.20
CALIFORNIA—						
200 vis., 2½-3 color	.15	.17	.15	.17	.15	.17
300 vis., 2 -4 color	.16	.19	.16	.19	.16	.19
350 vis., 3½-4 color	.17½	.20	.17½	.20	.17½	.20
400 vis., 4 -4½ color	.19	.20	.19	.20	.19	.20
Red Neutrals:						
200 vis., 4½-5 color	.13	.14	.13	.14	.13	.14
300 vis., 5 -6 color	.14	.17	.14	.17	.14	.17
400 vis., 5 -6 color	.16	.18	.16	.18	.16	.18
500 vis., 6 -6½ color	.17	.18	.17	.18	.17	.18
600 vis., 9½ plus	.18	.21	.18	.21	.18	.21

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK DOMESTIC MARKET

Motor Gasoline:	Oct. 21	Oct. 14	Oct. 7
Spot Gasoline, Bayonne	.10	.10½	.10¾
V. M. P. Naphtha, in steel barrels	.15	.15	.15
Lubricating Oil (Industrial) at refinery, Bayonne, N. J.:			
Cylinder, extra light filtered, in barrels	.44½	.44½	.44½
Cylinder, light filtered, in barrels	.38	.38	.38½
Cylinder, Bright Stock	.48½	.48½	.48½
Cylinder, steam refined (600)	.30½	.30½	.30½
Black, in bulk	.12	.12	.12
Bloomless, white, 30-31 gravity, 170 vis.	.44	.44	.44
Bloomless, 885 specific gravity	.16½	.16½	.16½
Red Paraffin:			
170 viscosity	.22	.22	.22
212 viscosity	.23	.23	.23
265 viscosity	.24	.24	.24
295 viscosity	.26	.26	.26
Paraffin, 903 specific gravity	.31	.31	.31
*Fuel Oil:			
Bunker O l. 14 plus: October 11 to October 18, 1924, per bbl., $1.75.			
Diesel Oil, at refinery, barrel	2.00	2.00	2.00
Furnace Oil, tank wagon, gallon	.10	.10	.10
Gas Oil, delivered in New York	.05	.05	.06
Wax, fully refined:			
120-122 a.m.p.	.05⅝	.05⅝	.05⅝
125-127 a.m.p.	.06	.06	.06
130-132 a.m.p.	.06½	.06½	.06½
135-137 a.m.p.	.07¾	.07¾	.07¾

*Lighterage 6.5c a barrel extra.

NEW YORK EXPORT PRICES

	Oct. 21	Oct. 14	Oct. 7
Motor Gasoline, in cases, gallon	.26.14	.26.14	.26 14
Motor Gasoline, U. S. Navy, spec. gallon	.12.25	.12.25	.12 25
Naphtha, 60° F., 59-61 spec. grav.	.13 25	.13.25	.13.25
Naphtha, 60° F., 63 66 spec. grav.	.14.5	.14.5	.14.5
Naphtha, 60° F., 66-68 spec. grav.	.16.0	.16.0	.16.0
Kerosene:			
Standard white, in bulk	.06½	.06½	.06½
Standard white, in barrels, gallon	.13½	.13½	.13½
Standard white, in cases, gallon	.16.9	.16.9	.16.9
Water white, in cases, gallon	.07½	.07½	.07½
Water white, in barrels, gallon	.14½		
Water white, in cases, gallon	.17	.14½	.14½

LOS ANGELES EXPORT PRICES

Kerosene:	Oct. 21		Oct. 14		Oct. 7	
Water white	.05	.05½	.05	.05½	.05	.05½
U. S. Motor gasoline, 54-56, 437 end point	.09	.09½	.09	.10	.09	.10

CRUDE OIL PRICES

October 4.—Magnolia Petroleum Co. adopted the Prairie Oil & Gas Co. prices for Oklahoma, North Texas and Kansas for crude below 33 degrees gravity. No change was made in its schedule above 33 degrees gravity.

October 6.—Standard Oil Co. of Louisiana adopted a two-gravity schedule for Smackover, Ark. crude.

October 8.—Standard Oil Co. of Louisiana reduced El Dorado, Ark. crudes 10 cents.

October 14. — Prairie Oil & Gas Co. announced that it would pay for all crude run to its account since October 1 and pay for oil stored to the account of producers since July 17, 1924, at present posted prices. No storage charge provided offer is accepted by October 31, 1924.

Arkansas and North Louisiana

Caddo, 38° and above	$1.35
35° to 37.9°	1.25
32° to 34.9°	1.15
Below 32°	1.00
Homer, 35° and above	1.10
33° to 34.9°	1.00
31° to 32.9°	.90
Below 31	.75
Haynesville, 33° and above	1.00
Below 33°	.90
El Dorado, 33° and above	1.00
Below 33°	.90
Bull Bayou, 38° and above	1.15
35° to 37.9°	1.00
32° to 34.9°	.85
Cotton Valley	.80
De Soto	1.20
Crichton	1.00
Bellevue	1.10
Smackover, 25° and above	.95
Below 25°	.85
*Stephens, Ark.:	
26° and above	.90
Below 26°	.70

*Posted by Atlantic Oil Producing Co.

Wyoming and Montana

Rock Creek (Wyo.)	$ .95
Salt Creek	.85
Big Muddy	.75
Mule Creek	.60
Grass Creek (light)	1.20
Elk Basin	1.20
Lance Creek	1.15
Osage	1.15
Cat Creek (Mont.)	1.20
Sunburst (Mont.)	.90
Lost Soldier	.78
Greybull and Torchlight	1.15
Hamilton Dome	.80

Lander based on contracts covering entire production of fields.

Oklahoma, Kansas, North and Central Texas

Prairie Oil & Gas Co. and other major purchasing companies, except as noted:

Below 30°	$ .75
30° to 32.9°	.90
33° to 35.9°	1.10
36° and above	1.25
Magnolia Petroleum Co.:	
*33° and above	1.25
Corsicana Light	1.25
Corsicana Heavy	.90
Mexia	1.25
Powell	1.25
Thrall	1.00

*Below 33° gravity, same as Prairie.

Humble Oil & Refining Co.

Ranger:	
Below 30°	$ .90
30° to 32.9°	1.10
33° to 35.9°	1.25
36° and above	1.35
Mexia	1.25
Powell	1.25
Currie	1.25
Richland	1.25

*Wichita-Archer Counties and Moran, same as Prairie.

Gulf Coast

Grade "A"	$1.25
Grade "B"	1.05
Luling	.90
Laredo (Magnolia Petroleum Co.)	.75
Rockdale-Minerva (Milam County)	1.25
Calliham (Live Oak-McMullen)	1.53
*High Island	.85

*Posted by Sun Co.

***Somerset**

26° and above	.95
Below 26°	.85

*Posted by Grayburg Oil Co.

California

14° to 14.9°	$1.00
20° to 20.9°	1.01
21° to 21.9°	1.02
22° to 22.9°	1.03
23° to 23.9°	1.05
24° to 24.9°	1.07
25° to 25.9°	1.10
26° to 26.9°	1.13
27° to 27.9°	1.16
28° to 28.9°	1.19
29° to 29.9°	1.22
30° to 30.9°	1.25
31° to 31.9°	1.28
32° to 32.9°	1.31
33° to 33.9°	1.34
34° to 34.9°	1.37
35° to 35.9°	1.40
36° to 36.9°	1.46
37° to 37.9°	1.52
38° to 38.9°	1.58
39° to 39.9°	1.64
40° to 40.9°	1.70
41° to 41.9°	1.76
42° and above	1.82

Eastern States

Penna Grade Oil in New York Transit Lines	$2.85
Bradford District Oil in National Transit Lines	2.85
Penna Grade Oil in National Transit Lines	2.75
Penna Grade Oil in Southwest Po. Pipe Line Lines	2.75
Penna Grade Oil in Eureka Pipe Line Lines	2.75
Penna Grade Oil in Buckeye Pipe Line Lines	2.75
Cabell Grade Oil in Eureka Pipe Line Lines	1.45
Corning Grade Oil in Buckeye Pipe Line Lines	1.50
Somerset Medium Oil in Cumberland Pipe Line Lines	1.55
Somerset Light Oil in Cumberland Pipe Line Lines	1.70
Ragland Grade Oil in Cumberland Pipe Line Lines	.90
Lima	1.58
Wooster	1.40
Illinois	1.37
Indiana	1.38
Princeton	1.37
Plymouth	.75
Waterloo	.75
†Oil Springs, Canada	2.30
†Petrolia, Canada	2.23
*Western Kentucky, 36° and above	1.20
*Western Kentucky, 33° to 35.9°	1.10
*Western Kentuck, 32.9° and below	1.00
Cumberland and Monroe Counties, (Ky.) (Paragon Dev. Co.)	1.70

†Plus Government bounty of 26½c.

*Prices for Warren, Allen, Hancock, and Ohio Counties by Indian Refining Co. Prices for Warren and Simpson Counties by Paragon Development Co. are 10 cents higher.

Mexican Crude

*Tuxpam (f.o.b. Mexican ports)	$1.15
†Panuco (f.o.b. Mexican ports)	.95
Tuxpam (New York)	1.72
Panuco (New York)	1.38

*Plus 32.33c. †Plus 17.64c tax. Prices based on contracts.

Who's Who in Pipe Line Transportation

Geographical and Company Distribution of the 82,000 Mile System In the United States Representing $750,000,000 Invested

By Charles E. Bowles

The latest report of the United States Geological Survey indicates that there are over 82,000 miles of oil pipe line in the United States.

A fair estimate of the investment in these pipe lines, based upon reports to the Interstate Commerce Commission, would be about $750,000,000.

Of this mileage and valuation the 16 pipe line companies that are included in the so-called "Standard Oil Group" account for over $337,000,000.

Sixteen so-called "Independent" companies, important because of mileage or strategic position, account for about 17,000 miles and $120,000,000.

The Sinclair lines, of which 50 per cent is owned by the Standard of Indiana, are over 5,700 miles long and represent an investment of over $72,000,000.

These 33 pipe line companies represent over 70,000 miles of line and over $529,000,000 of investment. They represent 85 per cent of the total pipe line mileage of the United States and probably 80 per cent of the total investment.

Regardless of the thousands of people that are interested in the producing of crude oil and the thousands that are interested in the sale of refined products to the public, the fact is very obvious that both the pipe lines and the refineries of the United States are in the hands of a relatively few companies. Conceding that there are about 200 distinct pipe line companies, it would follow that as 33 companies own 70,000 miles, or 85 per cent of the total mileage, the remaining companies, say 167, own the remaining 12,000 miles, or 15 per cent.

Largest Builders

The different Standard Oil companies have done very little producing of crude oil east of the Mississippi River, but they have been by far the largest builders of pipe lines. In analyzing the 12 Standard pipe line companies, in the eastern area, we find that they automatically integrate into a few transportation units, so far as the continuous movement of crude oil is concerned. And from this viewpoint they are not different from a dozen "short length" railroads, in the same area, that automatically integrate into a few long lines in the movement of freight over long distances.

A barrel of oil, traveling by pipe line from the Cushing Field to the Bayonne refinery would go through the pipe lines of several different companies, just the same as a tank car of gasoline would go over a half dozen different railroads in making the same journey. The essential idea back of both the crude oil and the tank car is continuous movement from point of origin to destination. Who owns the pipe lines and the railroads, and how many different owners there are, are matters of secondary importance—the vital idea back of the building of the lines has been the continuous, uninterrupted movement of the crude oil.

No great railroad system could have been laid out more strategically, or more efficiently, than the Standard pipe lines east of the Mississippi River. Their very efficiency was their downfall, so far as the decision of 1911 was concerned—and yet when, in 1924, we see the Van Sweringens of Cleveland assemble a half dozen railroads into one great system we wonder if the Government's changed attitude on railroad "mergers" is not a belated recognition of both the corporate legality and the industrial efficiency of the early Standard pipe lines which operated under one management.

Mid-Continent Lines

The greater part of the pipe line building east of the Mississippi River had been completed before pipe line building started in the Mid-Continent. In 20 years the Mid-Continent lines have carried about as much crude oil as the Eastern lines in 60 years. Today the Mid-Continent lines are carrying all of their own production, about 375,000,000 barrels a year, while the Eastern lines are carrying all of their own production, about 40,000,000 barrels, plus whatever the Prairie, Sinclair and Ozark (Roxana) deliver to refineries east of the Mississippi River.

Today there are 35,000 miles of line east of the Mississippi and over 41,000 miles in the Mid-Continent. The facility and cheapness with which the pipe lines have moved crude oil out of the Mid-Continent to Eastern refineries has been an important factor in the development of production in the Mid-Continent—but the tariff rates for the movement of refined products out of the Mid-Continent have had a decidedly different influence on the development of refining in the Mid-Continent.

One would think that the spirit of the Sherman Anti-Trust Act had been violated if the refined products from the Mid-Continent, carried by tank car, could not compete in the Eastern markets with the products whose raw material had been carried to Eastern refineries by pipe line. And yet the fact remains that the rates on refined products, fixed by the Interstate Commerce Commission, have automatically eliminated Mid-Continent products from some markets whose raw material came by pipe line from the Mid-Continent.

Standard Lines

Considering the Standard Oil lines separately, we find over 26,000 miles east of the Mississippi, over 19,000 in the Mid-Continent, about 800 in the Rocky Mountain area and about 1,200 miles in California—a total of almost 48,000 miles.

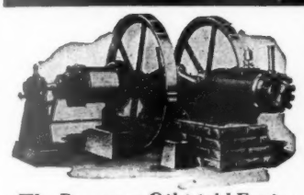
The Standard of Indiana owns an undivided half

(Continued on Page 122)

TABLE 1—STANDARD GROUP, PIPE LINE COMPANIES

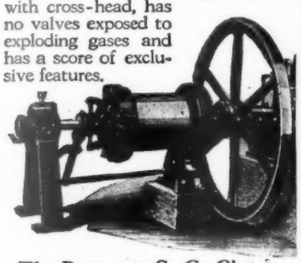
Area—	Pipe Line Company—	Area served—	Miles	Total Investment
East	Buckeye Pipe Line Co.	Ohio	6,455	$ 21,776,000
	Crescent Pipe Line Co.	Pennsylvania	274	1,982,000
	Cumberland Pipe Line Co.	Kentucky—Appalachian Field	1,250	6,866,000
	Eureka Pipe Line Co.	West Virginia—Appalachian Field	4,719	12,738,000
	Illinois Pipe Line Co.	Pennsylvania, Ohio, Indiana, Illinois	3,046	30,607,000
	[1]Imperial Pipe Line Co., Ltd.	Ohio, Michigan	179	1,210,000
	Indiana Pipe Line Co.	Indiana	982	9,344,000
	National Transit Co.	Pennsylvania	3,942	12,138,000
	New York Transit Co.	New Jersey, New York	1,534	8,524,000
	Northern Pipe Line Co.	Pennsylvania	606	5,926,000
	S. W. Penn. Pipe Line Co.	Pennsylvania—Appalachian Field	1,682	5,502,000
	Southern Pipe Line Co.	Pennsylvania—Appalachian Field	1,131	13,705,000
	[2]Tuscarora Pipe Line Co.	Pennsylvania—New Jersey	597	6,750,000
			26,397	$137,068,000
Mid-Continent and Gulf Coast	[1]Humble Pipe Line Co.	Texas	1,580	20,182,000
	[2]Magnolia Pipe Line Co.	Oklahoma, Texas	2,851	29,984,000
	[1]Oklahoma Pipe Line Co.	Kansas, Oklahoma	1,236	13,656,000
	[1]Standard Pipe Line Co., Inc.	Arkansas, Louisiana	3,036	24,772,000
	Prairie Pipe Line Co.	Mid-Continent—Missouri, Illinois, Indiana	10,773	86,479,000
	Standard of Ind. (See Sinclair)	Mid-Continent—Missouri, Illinois, Indiana	.....	.....
			19,476	$175,073,000
Rocky Mountain	Std. of Ind. (See Sinclair P.L.)	Salt Creek to Freeman, Mo.	.....	.....
	Std. of Ind. (Mid West)	Wyoming	277	.....
	Illinois Pipe Line Co.	Wyoming-Montana	500	.....
Pacific Coast	Standard of California	San Joaquin Valley and Los Angeles Basin	1,200	25,000,000
	Total, 16 Standard Companies		47,850	$337,141,000
	Partially Standard Owned			
Mid-Continent	Sinclair Pipe Line Co.	Mid-Continent—Missouri, Illinois, Indiana	5,012	.....
Rocky M'ntain	Sinclair Pipe Line Co.	Salt Creek to Freeman, Mo.	720	.....
			5,732	$ 72,037,000
	Independent Pipe Line Companies			
East	Paragon Pipe Line Co.	Cygnet to Toledo, Ohio	237	.....
	Pure Oil Co.	Ohio, West Virginia, Pennsylvania, Texas	2,347	4,842,000
	Sun Pipe Line Co.	Ohio, Oklahoma, Texas	481	.....
	Tide Water Pipe Line Co.	Illinois, Indiana, Ohio, Pennsylvania, New Jersey, New York	2,111	11,098,000
Mid-Continent and Gulf Coast	Cosden Pipe Line Co.	Oklahoma	1,000	.....
	Empire Pipe Line Co.	Kansas, Oklahoma, Texas	963	10,151,000
	Gulf Pipe Line Co.	Kansas, Oklahoma	1,312	9,229,000
	Gulf Pipe Line Co.	Texas, Louisiana	1,930	26,872,000
	Marland Oil Co.	Oklahoma	321	.....
	Ozark (Roxana) Pipe Line Co.	Oklahoma, Illinois	824	11,772,000
	Pierce Pipe Line Co.	Oklahoma, Texas	282	.....
	Sinclair (See above)	Mid-Continent, Missouri, Indiana, Illinois and Gulf Coast	.....	.....
	Texas P. L. Co. of Oklahoma	Oklahoma	654	7,853,000
	Texas Pipe Line Co.	Arkansas, Louisiana, Texas	1,951	38,271,000
Rocky M'ntain	Mutual	Montana, Cat Creek	22	.....
	Sinclair (See above)	Salt Creek to Freeman, Mo.	.....	.....
Pacific Coast	Associated Pipe Line Co.	California	707	.....
	General P. L. Co. of California.	California	723	.....
	Producers Transportation Co. (Union Oil Co.)	California	835	.....
	Shell Co. of California	California	170	.....
	Total, 16 independent companies		16,870	$120,065,000
	Grand total, 33 companies		70,452	$529,254,000

[1]Standard of New Jersey.
[2]Standard of New York.



The Bessemer Oil Field Engine

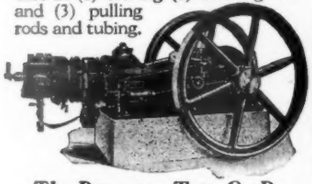
Famous in deep oil territory the world over. Deep territory proves the worth of an engine and clutch. The original two-cycle engine, built with cross-head, has no valves exposed to exploding gases and has a score of exclusive features.



The Bessemer S. G. Clutch

(Reversible)

The latest big-scale improvement in Bessemer equipment. It will show you new standards in speed and ease in (1) drilling (2) cleaning out and (3) pulling rods and tubing.



The Bessemer Type O. D. Engine

Operates on either oil or gas with only a slight change in equipment. A proper engine for any oil field need—especially where a failure of natural gas threatens.

BESSEMER Products include machinery for every oil and gas field need—each is built from raw materials to finished product in the Bessemer Plant at Grove City, Pennsylvania, the largest plant of its kind in the world.

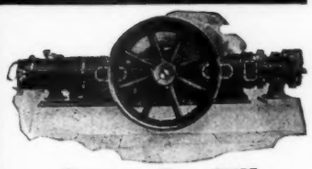
Bessemer Equipment is giving reliable and economical Service in oil fields throughout the world. The world-wide demand which Bessemer engines enjoy is a point in proof that—*You buy the best when you buy a Bessemer.*

A Who's Who of the Gasoline-from-Gas Industry will show that practically 90% of the machinery used is Bessemer built. Why? Because the Bessemer Gas Engine Company has been foremost in the development of machinery for this purpose and has literally placed this industry on a commercial basis. Our service extends from gas analysis to erecting the complete plant.

The Bessemer Gas Engine Company has an unequalled reputation gained in twenty-four years of manufacturing experience. That is the reason Bessemer can never let up on repeated and painstaking inspections throughout production and must maintain continuous progress in manufacturing methods. Every Bessemer Product must be *right*—you get the benefit.

Our experience covering over 24,000 installations of Bessemer equipment is at your service. Mention your need. Our engineers will be glad to co-operate with you without cost or obligation for preliminary plans or figures.

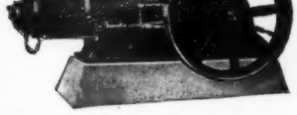
The Bessemer Gas Engine Co.
52 York Street Grove City, Pa.
Service Branches in the Principal Production Centers



Bessemer Type VIII

(With Bessemer Compressor Cylinder)

Combining engine and compressor in one unit saves floor space, belting expense, foundation and installation costs, and insures reliable and efficient service. Standard equipment in the Gasoline-from-Gas Industry.



Bessemer Type IV Oil Engine

(15 to 180 H. P.)

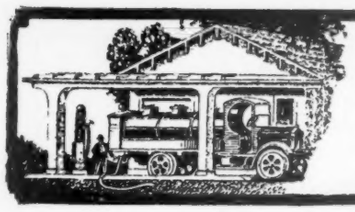
Firmly established in its popularity, this engine with enclosed crank case, cross-head construction, patented combustion chamber and other features is without an equal for economical trouble-free performance.

Bessemer Roller Pumping Powers

—will give you better service, will wear longer, will require less attention, and are less liable to break because of nine important features.

BESSEMER

BESSEMER OIL FIELD ENGINES – COMPRESSORS VACUUM PUMPS – ROLLER PUMPING POWERS



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns, Oct. 21

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

Main Service Station Price

	Gasoline Tank wagon	Gasoline Incls tax of	Gasoline Service station	Kero. Tank wagon
Chicago District—				
†100 gals. or more	13.0	...	16.0	11.0

Tank wagon prices on April 10, 1922; g. up 1½c; May 8, g. up 1c; June 27, both up 1c; July 19, g. down 2c, k. down 1c; Oct. 10, g. down 2c; Oct. 21, g. down 1c; Feb. 5, 1923, g. up 1c; Feb. 20, g. up 1c; Aug. 14, g. down 6.6c; Oct. 4, k. down 1½c; Nov. 10, g. down 1.4c; Dec. 29, g. up 2c; Jan. 12, 1924, g. up 2c, k. up 1c; Feb. 5, g. up 2c, k. 1c; July 18 g. down 1c; July 30, g. and k. down 1c; Sept. 12, g. down 2c.

Decatur, Ill.	13.2	...	15.2	11.5
East St. Louis	12.1	...	14.35	10.6
Joliet	13.4	...	15.4	11.7
Peoria	13.2	...	15.2	11.5
Quincy	13.2	...	15.2	11.3
Davenport, Ia.	13.5	...	15.5	11.9
Des Moines	13.5	...	15.5	11.9
Keokuk	13.5	...	15.5	11.0
Sioux City	13.0	...	15.0	11.5
Duluth, Minn.	14.5	...	16.5	12.4
Minneapolis	14.2	...	16.2	12.6
La Crosse, Wis.	14.2	...	16.2	12.4
Milwaukee	13.1	...	15.1	11.3
Madison	13.3	...	15.3	11.5
Detroit, Mich.	13.8	...	15.8	12.2
Grand Rapids	13.7	...	15.7	12.1
Saginaw	13.9	...	15.9	12.3
Evansville, Ind.	15.0	2.0	17.0	11.5
Fort Wayne	15.4	2.0	17.4	11.9
Indianapolis	15.2	2.0	17.2	11.7
South Bend	15.4	2.0	17.4	11.9
Fargo, N. D.	15.9	1.0	17.9	14.6
Huron, S. D.	17.0	2.0	19.0	13.1
Sioux Falls	15.0	2.0	17.0	12.6
*Kansas City, Mo.	13.9	1.0	15.9	10.3
Springfield	13.8	...	15.8	11.2
*St. Louis	12.6	0.5	14.9	11.0
*St. Joseph	13.0	0.5	15.0	10.9
Wichita, Kans.	12.8	...	15.0	9.8
Bartlesville, Okla.	14.4	...	16.9	9.9

*City tax.
†Tank wagon price on less than 100 gallons, 14c.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline Tank wagon	Gasoline Incls tax of	Gasoline Service station	Kero. Tank wagon
Newark, N. J.	13.5	...	....	13.0
Atlantic City	13.5	...	....	13.0
Annapolis, Md.	15.0	2.0	17.0	12.0
Baltimore	15.0	2.0	17.0	11.0
Cumberland	15.0	2.0	17.0	12.5
Washington, D. C.	16.0	2.0	18.0	12.5
Norfolk, Va.	17.5	3.0	19.5	13.5
Petersburg	17.5	3.0	19.5	13.5
Danville	17.5	3.0	19.5	13.5
Richmond	17.5	3.0	19.5	13.5
Roanoke	17.5	3.0	19.5	13.5
Keyser, W. Va.	15.0	2.0	....	13.5
Charleston	16.0	2.0	....	12.5
Parkersburg	16.0	2.0	....	13.5
Wheeling	16.0	2.0	....	13.5
Charlotte, N. C.	15.0	3.0	....	13.5
Hickory	15.0	3.0	....	13.5
Mt. Airy	15.0	3.0	....	13.5
Salisburg	15.0	3.0	....	13.5
Charleston, S. C.	15.5	3.0	....	14.0
Columbia	15.5	3.0	....	14.0

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline Tank wagon	Gasoline Incls tax of	Gasoline Service station	Kero. Tank wagon
Atlanta, Ga.	17.0	3.0	20.0	13.0
Augusta	17.0	3.0	20.0	13.5
Macon	17.0	3.0	20.0	14.5
Savannah	14.0	3.0	17.0	13.0
Birmingham, Ala.	15.0	3.0	18.0	14.5
Mobile	14.0	2.0	17.0	12.0
*Montgomery	16.0	3.0	19.0	15.5
Clarkedale, Miss	15.0	3.0	18.0	12.0
Jackson	15.0	3.0	18.0	10.0
Natchez	14.5	3.0	17.5	11.5
Vicksburg	14.5	3.0	17.5	11.5
Jacksonville, Fla	15.0	3.0	18.0	13.0
Miami	17.0	3.0	20.0	14.5
Pensacola	15.0	3.0	18.0	13.5
Tampa	15.0	3.0	18.0	13.0
Lexington, Ky.	16.0	3.0	19.0	14.0
Covington	15.0	3.0	18.0	14.0
Louisville	15.0	3.0	17.0	12.0

*In addition to State tax of 2 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and ½ cent on kerosene.

PACIFIC COAST DISTRICT

Standard Oil Co. (California)

	Gasoline Tank wagon	Gasoline Incls tax of	Gasoline Service station	Kero. Tank wagon
San Francisco	17.0	2.0	20.0	15.5
Los Angeles	16.0	2.0	19.0	16.5
Fresno	17.5	2.0	20.5	17.5
Reno, Nev.	20.5	2.0	23.5	19.0
Portland, Ore.	19.0	2.0	22.0	16.5
Seattle, Wash.	18.0	2.0	21.0	16.5
Tacoma	18.0	2.0	21.0	16.5
Spokane	22.0	2.0	25.0	20.5
Phoenix, Ariz.	23.0	3.0	26.0	21.5

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline Tank wagon	Gasoline Incls tax of	Gasoline Service station	Kero. Tank wagon
Basin, Wyo.	17.0	1.0	....	14.0
Casper	15.0	1.0	17.0	12.0
Cheyenne	16.5	1.0	18.5	13.5
Cody	18.0	1.0	....	15.0
Lander	17.0	1.0	....	14.0
Albuquerque, N. M.	19.0	1.0	21.0	15.0
Salt Lake, Utah	20.0	2.0	22.0	17.0
Ogden	20.0	2.5	22.0	17.0
Denver, Colo.	16.0	2.0	18.0	13.5
Glenwood Spgs.	20.0	2.0	....	17.5
Pueblo	16.0	2.0	18.0	13.5
Billings, Mont.	18.5	2.0	20.5	14.5
Butte	20.0	2.0	22.0	15.0
Great Falls	20.0	2.0	22.0	16.0
Helena	20.0	2.0	22.0	16.0
Miles City	19.5	2.0	21.5	16.5
Missoula	21.0	2.0	23.0	16.0
Boise, Idaho	21.5	2.0	23.5	19.0
Idaho Falls	21.0	2.0	23.0	18.5

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline Tank wagon	Gasoline Incls tax of	Gasoline Service station	Kero. Tank wagon
*Pittsbugh, Pa.	14.0	...	19.0	14.0
*Philadelphia	14.0	...	19.0	14.0
*Scranton	14.0	...	19.0	14.0
*Allentown	14.0	...	19.0	14.0
*Altoona	14.0	...	19.0	14.0
Dover, Del.	16.0	2.0	19.0	14.0
Wilmington	16.0	2.0	19.0	14.0

*Pennsylvania tax of 2 cents is collected by the dealer and paid by him direct to the State.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline Tank wagon	Gasoline Incls tax of	Gasoline Service station	Kero. Tank wagon
Albany, N. Y.	14.0	...	....	13.0
*New York	14.0	...	....	13.0
Buffalo	13.0	...	....	12.0
Rochester	14.0	...	....	13.0
Syracuse	14.0	...	....	12.0
Boston, Mass.	13.0	...	....	13.0
Providence, R. I.	13.0	...	....	13.0
Augusta, Me.	14.0	1.0	....	13.0
Manchester, N. H.	15.0	2.0	....	13.0
Burlington, Vt.	14.0	1.0	....	13.0

*Price in steel barrels.
Note: Standard Oil Co. of New York does not quote service station prices in its territory. In most cases the service station price is 2 or 3 cents higher than tank wagon price.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline Tank wagon	Gasoline Incls tax of	Gasoline Service station	Kero. Tank wagon
Omaha	11.0	...	13.0	11.5
Crawford	14.0	...	....	12.25
McCook	14.75	...	16.75	13.0
Norfolk	13.75	...	15.75	12.0
North Platte	14.75	...	16.75	12.75
Scotts Bluff	14.25	...	16.25	12.25

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline Tank wagon	Gasoline Incls tax of	Gasoline Service station	Kero. Tank wagon
Dallas, Tex.	10.0	1.0	13.0	10.0
Fort Worth	10.0	1.0	12.0	10.0
Houston	11.0	1.0	15.0	10.0
San Antonio	10.0	1.0	13.0	10.0
El Paso	12.0	1.0	14.0	11.0
Muskogee, Okla.	12.0	2.5	17.0	11.0
Oklahoma City	12.0	2.5	15.0	10.0
Tulsa	12.0	2.5	15.0	10.0
Ft. Smith, Ark.	15.0	4.0	18.0	12.0
Little Rock	17.0	4.0	19.0	13.0
*Texarkana	16.0	4.0	19.0	13.0

*Does not include 1c additional tax.

OHIO

Standard Oil Co. (Ohio)

	Gasoline Tank wagon	Gasoline Incls tax of	Gasoline Service station	Kero. Tank wagon
All Ohio points	15.0	...	17.0	14.0

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline Tank wagon	Gasoline Incls tax of	Gasoline Service station	Kero. Tank wagon
New Orleans, La.	13.5	2.0	15.5	9.0
Alexandria	14.5	2.0	16.5	13.0
Baton Rouge	13.0	2.0	15.0	11.5
Lake Charles	14.5	2.0	16.5	13.0
Shreveport	14.5	2.0	16.5	13.0
Memphis, Tenn.	14.0	2.0	16.0	14.0
Chattanooga	15.0	2.0	17.0	14.5
Knoxville	16.5	2.0	18.5	15.0
Nashville	15.5	2.0	17.5	13.5
Bristol	17.0	2.0	19.0	13.5
Little Rock, Ark.	17.0	4.0	19.0	13.0

ELK HILLS OIL LEASE CASE AT LOS ANGELES

LOS ANGELES, Cal., Oct. 20.—The case of the United States versus the Pan-American Petroleum Co. was called in the court of Federal Judge Paul J. McCormick Monday morning and continued by consent until Tuesday. The Government is seeking to oust the Pan-American Company, headed by Edward L. Doheny, from its holdings in the Elk Hills region in Naval Petroleum Reserve No. 1, on charges of fraud arising out of the investigation conducted by Senator Walsh's committee last spring.

The effort of the Government is to annul and cancel the Elk Hills leases, and the contracts issued the Pan-American Petroleum & Transport Co., also a Doheny company, relative to the construction of fuel oil storage facilities at the Pearl Harbor re-fueling base.

Representing the Government are former United States Senator Atlee Pomerene and Owen J. Roberts, appointed by President Coolidge as special oil counsel to investigate the Teapot Dome and Elk Hills leases, with United States Attorney J. C. Burke and R. B. Camarillo.

For the defense, Frank J. Hogan of New York and Washington, E. L. Doheny's person counsel, will be one of the leading figures. Others include Frederick H. Kelloeg of New York; Joseph J. Cotter of Washington; Harold Walker, Washington; Dean Emery, Washington, of the law firm of Olin Wellborn & Charles Wellborn of Los Angeles, and the law firm of O'Melveny, Millikin & Tuller.

The principal question involved is whether the Elk Hills leases should be annulled, and the property involved revert back to the Government. Two contentions in support of these claims by the Government will be made. One has to do with the asserted fraud, which, if true, would make these leases invalid, and the other has to do with the asserted lack of authority under which President Harding transferred control of the oil reserves from the Naval to the Interior Departments.

The company's attorneys will deny any fraud or irregularity in connection with the leases, and will try to prove that the Government could not have obtained a better contract or lease than the one granted the Pan-American.

They will attempt to show that every alternate section of land, about which the 30,000-acre Pan-American lease was made was owned by the Pacific Oil Co. and that the legitimate oil developments by this company would eventually drain the whole territory unless immediate offset work was done. For this reason, it will be argued, the Government, to protect its own interests, was forced to develop the oil reserve, and that the only logical thing possible was done—the lease, with the best possible terms, was issued, and development work started.

The Government has subpoenaed about 60 witnesses, and more than twice this number is expected to be called by the defense. Among the Government witnesses will be Paul Shoup, Southern Pacific Railroad official, and president of the Pacific Oil Co., and the Associated Oil Co.; William F. Herrin, chief counsel for the Southern Pacific; L. T. St. Clair of the Union Oil Co.; H. M. Storey of the Standard Oil Co.; D. M. Folsom of the General Petroleum Co.; Oscar Sutro, Standard Oil counsel.

MUCH PRICE CUTTING, LOS ANGELES REPORTS

LOS ANGELES, Cal., Oct. 18.—The gasoline market in southern California becomes more and more interesting every day. There has been much price cutting by the smaller refining companies and particularly by independently operating peddlers, locally termed gasoline "bootleggers." It is estimated fully one-third of the gasoline retailed in Los Angeles district is being handled by these bootleggers. This material is being sold at prices varying from 2 cents to 5 cents below the price established by the major marketing companies. Most of it is of inferior quality. Dozens of new brands have sprung up and in addition there is a large quantity of gasoline simply sold unbranded. Until a few days ago the big companies did much talking but actually did nothing to combat the price cutting. As the situation became more and more serious, it was realized something had to be done to prevent a total loss of business by responsible marketers. Most established marketing concerns who have reputations to protect are meeting this situation now by selling two gasolines through the independent service stations who buy from them. One kind is their regular trade mark brand and the other kind is sold unbranded and at a price sufficiently low to meet the bootleg competition. The cut price gasoline sold in this manner naturally is of a grade inferior to the branded product. For instance, in Los Angeles it meets U. S. Motor grade specifications, but practically all of the long established brands do considerably more than this. Average gasoline as sold in the Los Angeles district by well known marketing companies had an end point varying from 410 to 425 degrees F., and much of it is blended with approximately 25 per cent of absorption natural gasoline.

The market on absorption natural gasoline remains strong at from 10½ cents to 11 cents per gallon for a product of an average end point of about 375 degrees F. During the past week a shortage of spot material has developed and a few lots were turned at prices ranging as high as 12 cents per gallon. This, however, is not representative of the market and reflects only a temporary shortage for a few days.

Fuel oil still rules strong at $1.40 per barrel at tidewater, although isolated spot lots held by refiners who have not access to ocean transportation are moving at prices from $1 per barrel up in the refining centers.

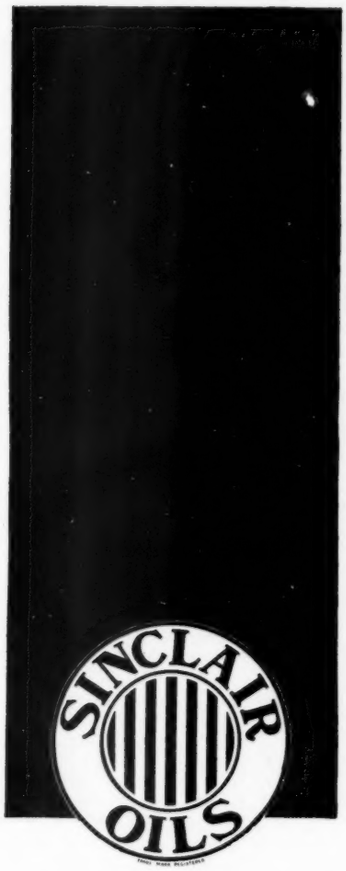
There is very little activity in the intermediate distillates such as engine distillate, kerosene and the various fuel distillates. Prices on these commodities have remained practically constant for months. The movement in lubricating oils is just a little slow and prices still show the slightly sagging tendency noted a week ago.

THINKS MAY FIND OIL IN LOWER CALIFORNIA

OKLAHOMA CITY, Oct. 20.—That the Los Angeles oil basin in California is duplicated in one or more areas of Lower (Baja) California is the belief of Dr. Irving Perrine, Oklahoma City geologist, who recently returned from a motor tour of the country south of the California border. In company with Dr. James L. Tucker, formerly head of the engineering department of the University of Oklahoma, Doctor Perrine spent two weeks in the South country, going as far down as the site of a test for oil being drilled about 500 miles south of San Diego.

They visited another drilling site, on the Johnson ranch, 143 miles south of the border, where they were told by the drillers a gas sand recently had been encountered that had a rock pressure sufficiently strong to blow the tools out of the hole. In that area they found the unusual thing in formations dipping away from the sea and a basin 35 miles wide that was bordered on the opposite side by sedimentary deposits.

SINCLAIR OILS



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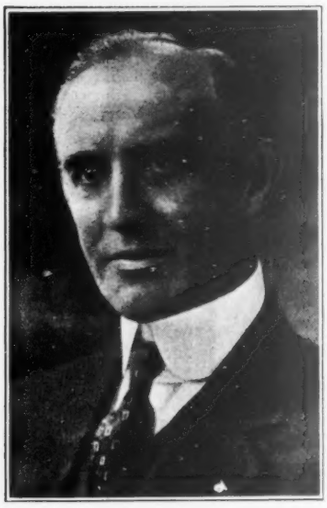

Homer T. Lamb

The president and active head of the Red Bank Oil Company, Tulsa, is Homer T. Lamb, one of the foremost developers of Wilcox sand pools in the older districts of southern Kansas, and one of the older operators who has led in the development of many fields in the Mid-Continent. Mr. Lamb is more particularly known for his development of the first Wilcox sand pool of importance in Kansas, coming in the summer of 1923. This pool, called the Lamb Pool, was situated along the Kansas-Oklahoma State line, southeast of Coffeyville, in Montgomery County, Kansas. A few wells were completed in Nowata County, Oklahoma. He was also interested in the Elk Hills Pool, 11 miles west of Independence, Kans., and his efforts led to the discovery of other Wilcox sand pools in Montgomery County, including the Canary Pool, the Kors Pool and a recent pool in Section 10-31-16, Montgomery County.

Mr. Lamb, who is 47 years old, hails from Clarion County, Pennsylvania, and received his schooling on the derrick floor. He was running his own tools in that region before he was 19 years old. He came to Oklahoma in 1903 and entered the activity around Wagoner and Cleveland. Mr. Lamb was instrumental in opening the Rantoul Pool in Kansas in 1905. He led the vanguard of oil operators to Wyoming in 1908 and returned to Oklahoma in 1917. Mr. Lamb has a number of individual interests in addition to his efforts through the Red Bank Oil Company, having connections in a number of producing and wildcat areas.

PERSONAL PARAGRAPHS

George L. Bodie, former manager for the Fred G. Clarke Company in Chicago, is back from his trip to the north woods.

* * *

R. D. Wallace, of the Kasoming Oil Company, Casper, Wyo., has been inspecting the new development in northwestern Colorado.

* * *

Charles Hoffman, scout in the Tonkawa Field for the Marland Refining Company, was a recent visitor to the company's offices in Tulsa.

* * *

E. J. McMahon, president of the Preston Oil Company, Denver, Colo., has been spending several days in Casper, Wyo., with his brother, L. F. McMahon.

* * *

Alex W. McCoy, vice president of the Marland Oil Company of Colorado, left last week for New York City, to consult with officials of the company there.

Max W. Ball, president of the Marine Oil Company, returned to Denver last week following an inspection of the oil fields of Moffat County, Colorado.

* * *

O. D. Donnell, vice president, and H. B. Carpenter, general purchasing agent of the Ohio Oil Company, Findlay, Ohio, were in Tulsa during the past week.

* * *

* * *

J. M. Douglas, geologist for the Union Oil Company of California, with headquarters at Fort Collins, Colo., was in Casper, Wyo., last week on business.

* * *

James A. Carroll, auditor for the Midwest Refining Company, Denver, Colo., was a business visitor to the company's offices in Casper, Wyo., recently.

* * *

Herman D. Curtis, in charge of operations at Salt Creek and other parts of Wyoming for the Empire Oil Company, has been spending a few days in Casper.

* * *

W. R. Ramsey ,of Oklahoma City, one of the largest independent oil operators in Oklahoma, made a short visit to Tulsa during the latter part of the Exposition.

* * *

Charles Blake, who recently returned to Petrolia, Ont., from the Persian oil fields, will take a position with the Anglo-Persian Oil Company at Swansea, South Wales.

* * *

W. H. Cannady, vice president of the Shaffer Oil & Refining Company, Chicago, has resigned from that organization. Mr. Cannady plans to take a rest before starting into business again.

* * *

R. H. Findeiss, Kansas oil producer, known widely through his connection with the partnership of Merriam & Findeiss, was one of the many Wichita, Kans., producers to visit the Exposition.

* * *

R. W. Howe, general manager of the pipe line division for the Atlantic Oil Producing Company, at Shreveport, La., was one of the many visitors in Tulsa during the latter part of the Exposition.

* * *

R. H. Smith, of Philadelphia, Pa., president of the Oklahoma Company, and discoverer of the Wewoka Field, has been visiting in Tulsa and other parts of the State since the close of the Exposition.

* * *

M. H. Goode, vice president in charge of land operations for the Marland Oil Company of California, made a recent trip from his office in San Francisco to Los Angeles to attend to business matters.

* * *

R. S. Ellison, vice president, and A. W. Peake, superintendent of operations for the Midwest Refining Company, Casper, Wyo., are on a tour of inspection of the company's property in Colorado, New Mexico and Utah.

* * *

R. P. McLaughlin, formerly with the California State Bureau of Mines, who now is a petroleum engineer with offices in Los Angeles, is recovering from a recent illness which confined him to his home for several weeks.

* * *

Val B. Maghee, deputy oil and gas inspector for the State geological department of Wyoming, returned last week after a trip to the Osage Field, where he supervised the plugging of an abandoned well drilled on a State lease.

* * *

E. L. Rick, engineer for the Dunn Manufacturing Company, Oxnard, Cal., inventor of the new Dunn safety elevators for casing, rotary work, and tubing left Tulsa last week for New York City, following the close of the Exposition.

* * *

F. H. Smith, formerly the Williamsport Wire Rope Company, covering the Rocky Mountain area from Casper, Wyo., with previous service with the Atlas Supply Company and the National Supply Company, has been named Rocky Mountain representative for the Dunn Manufacturing Company, of Oxnard, Cal. Mr. Smith will maintain his headquarters at Casper.

Joseph Kuper, formerly representative of several oil companies in the Mid-Continent Field and later organizer of the Motorene Oil Company, has formed a new company and will engage in the marketing of petroleum products in Chicago.

* * *

Clay Powers, accountant for the Ohio Oil Company, has been transferred from the Casper, Wyo., office to the Rawlins office of the company. Mr. Powers has made an enviable record with the Ohio in Casper and takes with him the best wishes of a host of friends.

* * *

J. S. Mellon, sales manager for the Dunn Manufacturing Company, Oxnard, Cal., who has been in Tulsa during the Exposition, left for a short visit to the company's main office. He expects to return to Tulsa, where he will maintain his headquarters during the winter.

* * *

J. T. Armitage, for many years in the sales department of the Union Oil Company in California, resigned recently to take a position of importance with the Pan-American Petroleum & Transport Company. He will have charge of the sales operations of this company on the Pacific Coast.

* * *

J. M. McHarta, of Ramona, Okla., who has been in Burmah, for the past eight years in the employment of the British Petroleum Company, has returned to India, following a short visit with his mother and a visit with old friends at the second International Petroleum Exposition and Congress.

* * *

J. W. Carnes, vice president in charge of sales for the Sinclair Refining Company, was in Chicago recently. He made an inspection of the district leaving for Cleveland and New York City later. J. M. Woodruff in charge of the concern's refinery sales at Chicago, is enjoying a vacation of several weeks.

* * *

Frederick G. Clapp is hunting for oil over the 200,000 square miles controlled by his clients in the Kimberley Desert region of the northwestern part of Australia. Immense wastes there have been traversed by his motor tractors covering areas never visited by white men. His explorations are continuing by motor and camel.

* * *

Phillips B. Dolman, geologist, associated with the Carter Oil Company for the past six years, has returned from a four months' tour of the oil fields and prospective areas in the Western States. He has entered private practice in capacity of consulting engineer and petroleum geologist at Tulsa, in the National Bank of Commerce Building.

* * *

Allen T. Towl of New York, vice president and general manager of the Southern Group of Pipe Lines; R. R. Shepard, of Oil City, treasurer of the Eureka Pipe Line Co., and E. W. Macklin of Parkersburg, W. Va., assistant superintendent of the same company, attended a directors' meeting of the Eureka Company in Pittsburgh recently.

* * *

Edward W. Simon, of Kansas City, Mo., distributor for the Manifold Supply Company, Brooklyn, N. Y., recently installed R. E. Seeley as his Tulsa manager. Mr. Seeley succeeds M. C. Hagar, who resigned recently to join the purchasing department of the Sinclair Crude Oil Purchasing Company. Mr. Simon has branches in Wichita, Kans., Oklahoma City, Tulsa and Shreveport.

* * *

John T. Blackwell has returned to Petrolia, Ont., from the Persian fields. George (Judd) Gregory, of Copleston, Ont., has returned from the Venezuela fields. Bloss Stevenson, of Copleston, Ont., has left to work for the Kern Oil Co., in Mexico. Morley Evoy, John Keene and George Glover, who have been drilling for the past six months in Venezuela, have returned to Petrolia, Ont.

* * *

John A. White of Stillwater, Okla., one of the last of the Americans to leave Mexico during the critical revolutionary period in 1915, returned recently to that country for the first time since he came out. He is to represent some American oil interests that seek leases and concessions in the vicinity of his ranch, near Tampico. Mr. White and his family lived in Mexico eight years and prospered.

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A POLITICAL SMOKE SCREEN

Oil men, smarting under the political attacks upon their industry, will have an opportunity November 4 to strike back at their persecutors.

The agitation against the oil business originates among legislators, State and national. Fostering bills, attacking, regulating and taxing the oil industry seems to be regarded by them as their one best bet.

If oil men are alive to their responsibilities there will be fewer of these demagogs in the Congress to be elected next month.

These agitators are to be found in every party. The attacks on the oil business are in that sense non-partisan. The question for oil men is whether they will allow party affiliation to blind them to the facts affecting their own business.

As a matter of fact this campaign against the oil industry is a political smoke screen to hide the truth from the voters.

Most of these candidates have no sound reason for appealing for votes. They stand for nothing, personally or politically, except the hunger for office. Their party labels are about as meaningless.

They miss the old issues that used to divide the parties. The tarriff, woman suffrage, the liquor issue, the currency, the questions arising out of the World War, offer no clean cut alignment any more.

But the politicians have to have some sort of issue and the gasoline bought by 18,000,000 automobile owners is as good as any to set the public by the ears.

That is the real meaning of the campaign against the oil industry. It is the explanation of the eagerness of demagogs in all parties to drag it into the limelight, to investigate, regulate and tax it.

Politicians know from experience that, like the military strategists, they must retain the offensive. They must have something to attack, otherwise the public attention cannot be seized or held.

What better object of attack than an industry whose products are bought by 18,000,000 people? If the public can be bamboozled into believing that the price of gasoline is too high, although government figures have shown it to be less than that of all other commodities over a period of ten years, and it is today, popular resentment can be aroused and political capital manufactured.

If, in addition, candidates can hoodwink voters into believing that the enactment of this bill or that can reduce the price of gasoline, the rest should be easy.

Governors and attorneys general help along the campaign by using the funds of States to sell gasoline below cost and by sponsoring suits in court that cannot be decided until the election is over and the candidates elected.

The railroads used to be the political bogy employed to frighten the public and line them up with the railroad—baiting candidates. But only a comparatively few persons were directly interested in railroad rates compared to the millions that are immediately concerned in the price of gasoline.

The campaign against the oil industry starts with a potential public sentiment vastly greater than anything ever arrayed in any other campaign against any industry or business.

The politicians are quick to realize this. They are so jealous of the opportunity that no one party is allowed a monopoly of oil baiting.

They were so anxious to smear each other with oil last spring that they overdid themselves. Then they switched back to gasoline and are still at it.

They have hardly begun to realize on their expectations upon gasoline as a political issue. They are already planning new and increased taxes, more sweeping regulations and restrictions, with a view to continuing the agitation in the next Congress.

The low price of gasoline during the past few years has been utterly disregarded in their mendacious campaign. If, as may be possible, the price has to be advanced to meet the cost of manufacture, it may be regarded as certain that the present agitation will be immensely intensified.

The radical and destructive proposals now being offered for control of the industry will no doubt seem tame to what may be evolved in such circumstances with a public inflamed by higher prices.

It is not so much that these candidates do not know the facts which are easily accesible to any fair-minded man. It is rather that the gasoline issue is regarded as the most plausible and powerful lever in working popular opinion.

There is little use in relying upon their sense of fairness when political ambition urges them to misrepresentation. The only hope is to appeal to the public which in the end is their master.

Oil men can do a lot in this way personally, even in the next few days. They can inform themselves about the standing of the candidates in their own district and use their influence with other business men to defeat those who are making a football of the oil industry.

They can remind their fellow business men in other lines that the spirit of radicalism which is just now centered against the oil business will be as swift to turn against any other business when the politicians find it profitable.

The paramount importance of the presidency is recognized clearly enough but the selection of a good Congress is no less essential. The best president in the world can be hampered, obstructed and even thwarted by a hostile majority in Congress.

More especially, must it be remembered that these radical and destructive proposals invariably emanate from Congress. The present radical wave has its center in the legislative branches. If oil men and business men generally want four years of peace, progress and prosperity they will have to bestir themselves in the selection of capable Congressmen November 4. If they are indifferent they may have four long years to regret their apathy.

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North-Central Texas Field

By Dan F. Dugan

Winnipeg Oil Co.'s No. 1 Bond, South Vernon Field, Wilbarger County, flows 435 bbls. Magnolia Petroleum Co.'s No. 2 Brown, Stephens County, 150 bbls. Lee Wilson's No. 2 Beardon, Archer County, flows 250 and No. 1 200 bbls. Section Two Oil Co.'s No. 1 Burnett, Wichita County, flows 150 bbls.

FORT WORTH, Tex., Oct. 20.—The daily production reported for the past week in the North Central Texas Field amounted to 120,955 bbls. as against 120,515 bbls. for the previous week, a gain of 440 bbls. daily.

Completions reported from the field totaled 42, of that number 20 were oil producers and 22 were disappointments. Compared with last week's report these was a decrease of 3 completions, a loss of 9 producing oil wells and a gain of 8 dry holes.

The largest producing completion reported was the Winnepeg Oil Co.'s No. 1 Bond in the South Vernon Pool, in Wilbarger County, which is credited with flowing 435 bbls. daily at 2,015 feet. In the deep producing south section of the field, the Magnolia Petroleum Co.'s No. 2 Brown, in Stephens County, was the largest initial producer reported. It is showing for 150 bbls. at 4,000 feet from a sand at 500 feet below the black lime.

South Vernon Pool

The South Vernon Pool in Wilbarger County, is the center of attraction at this time in the North Texas Field. In the immediate vicinity of the present producers several undeveloped leases changed owners by sale during the past week. Operators who announced they have acquired leases are: Bridwell & Heydrick, the east 30 acres of the southwest quarter of Section 78, comprising Blocks 8, 9 and 16 in Section 78 from Pace and others. Also the east 10 acres of the north 20 acres of the west 40 acres in the southeast corner of Section 99, Block 14.

W. G. Burton from Carl Zipperlie, 40 acres in the northwest quarter of the northwest one-half of Section 80. Barclay & Meadows, 40 acres in the southeast quarter of the northeast quarter of Section 84. The Texas Co., from Doss Bond, 60 acres in Tracts 6, 10, 11, 14 and 15, located in the southwest quarter of Section 78, Block 14, H. T. C. R. R. survey; J. I. Staley, the north half of the south quarter of the northeast quarter of Section 83. Some of the leases sold for around $500 an acre.

The pipe line being constructed by the Waggoner Refinery at Electra to the South Vernon Pool and which will give some relief to the congested condition now existing, is being rushed to an early completion. It is expected in a few days it will be ready to receive its first oil runs.

The Humble Pipe Line Co. has about completed the construction of its 100-mile pipe line from Fambro Station, Stephens County, through Young and Archer Counties to Wichita County. The company is installing gathering lines in the Swastika and Wilmot Pool in Archer County, and will run oil as soon as these lines are completed. The line, 100 miles long, is 6-inch pipe to the Swastika Pool, in Archer County, and 4-inch pipe from there to Wichita County. Its capacity is rated at 8,000 bbls. a day. This is the third pipe line for south Archer County and the first for north Young County.

Archer County More Active

Total activities show an increase in all sections of the county during the past week; the most active spot was in the Olney territory in the south section of the county.

The largest completion reported was the Lee Wilson's No. 2 Beardon, south of the Panhandle-Consolidated producers on the Ragle land, in the northeast corner of the John Hopkins survey. The sand was encountered at 1,065 feet, was drilled to 1,091 feet, showing 26 feet of an oil sand. Before the tools could be pulled the well started flowing by heads at the rate of 250 bbls. a day, establishing it as one of the best shallow wells ever finished in the county. The same company's No. 1 Beardon, to the east of the No. 2, was also completed in the sand at 1,075 feet and has been placed on the pump with a daily output of 200 bbls.

Northeast of the Panhandle-Consolidated producers on the G. White survey, the Swastika Oil Co.'s No. 1 Neal is a semicompletion in the sand at 1,084 feet, showing for a 150-bbl. producer.

South of the Beardon well on the Boren tract, the Shamrock Oil Co. was disappointed in the showing made in its No. 2 and has temporarily abandoned it at a depth of 1,125 feet.

In the productive areas on the A. T. N. C. L. lands, three wells were completed as a result of the activities in that field. Carter and others located in Section 34, J. W. White land, placed Nos. 4 and 5-E on the pump, making 175 bbls. each from the sand at 1,599 and 1,603 feet. Three other wells are being drilled on the same tract.

To the west of these producers, in Section 34, Harry Muse and others encountered the sand in No. 1 at 1,600 feet, and the well is flowing by heads between 200 and 250 bbls. a day.

Wichita County Slow

Activity in all sections of Wichita County was extremely slow during the past week. On the older leases the drilling wells have been cut to a minimum number. As soon as wells are completed tools are stacked and with the exception of the drilling of offsets and other necessary operations, no further developments are started.

Two good semicompletions reported for the week were in the section to the south and west of Fowlkes Station on the Burnett tracts. The Section Two Oil Co., in Section 2, T. N. O. survey, brought in No. 1 Burnett for 150 bbls. from the sand at 1,536 feet. In Section 5, the Texhoma Refining Co.'s No. 10-B Burnett is good for 100 bbls. from the sand at 1,821 feet. No. 5, in the northeast corner of the same lease, is rigged up and will commence drilling in a few days.

Other tests are the United Central Oil Corp.'s No. 13 McCarty in the Fowler survey, to the north of Beaver Creek, which is showing up for 100 bbls. from the sand at 1,656 to 1,678 feet.

In the Hill & Roberts Pool, the Underwood Drilling Co.'s No. 1 Newt Maer has been placed on the pump and is good for 125 bbls. The sand was picked up at 1,764 feet. Two other tests are being drilled by the same company on nearby tracts.

In the extreme southern part of the county two important tests are being drilled that in the event of making wells will add considerable acreage to producing territories. The Shappel Oil Co.'s No. 1 Sisk, in Block 21, Denton County school lands, 4 miles west of Murphy's Corner, is drilling at 1,530 feet, and southeast of the Shappel Oil Co.'s No. 1 Jackson about ½ mile John O'Donohoe is drilling at 1,730 feet the No. 1 Ouida Murrah.

Wichita County Completions

Couch and others' No. 1 Donohoe, dry at 1,345 feet; same company's No. 10 Donohoe, dry at 630 feet; same company's No. 11 Donohoe, dry at 630 feet; Grisham Parks Drilling Co.'s No. 1 Walling, dry at 2,000 feet; Hunter and others' No. 3 Bailey, dry at 1,568 feet; Magnolia Petroleum Co.'s No. 1 Lindsey, dry at 1,803 feet; Pace and others' No. 2 Donohoe, dry at 1,502 feet; Bower and others' No. 7 Peeler, 75 bbls. at 1,660 feet; Gardner and others' No. 3 Peeler, dry at 1,810 feet; Howell and others No. 1 Burnett, dry at 2,000 feet; Mid-Kansas Oil & Gas Co.'s No. 1 Waggoner, dry at 1,920 feet; Perkins and others' No. 9 Burnett, 70 bbls. at 1,815 feet; Rio Bravo Oil Co.'s No. 5 fee, 15 bbls. at 1,960 feet; Ryan Petroleum Co.'s No. 25 Nance, 90 bbls. at 1,680 feet; Scott and others' No. 1 Seay, dry at 1,265 feet; Underwood Drilling Co.'s No. 5 McCarty, dry at 1,815 feet; same company's No. 1 Maer, 125 bbls. at 1,770 feet; United Production Co.'s No. 3 Fouch, 50 bbls. at 1,560 feet.

Wichita County Drilling

Brunson and others' No. 1 Haney is spudding; Franklin and others' No. 1 Everett, fishing job at 425 feet; Miller and others' No. 1 Evans, cleaning out at 1,625 feet; Magnolia Petroleum Co.'s No. 103 Reilly, drilling in rock at 1,400 feet; No. 107 Reilly, drilling in blue shale at 1,405 feet; Ascott Co.'s No. 26 Roller, drilling at 1,675 feet; Underwood Drilling Co.'s No. 1 Roller, drilling in brown shale at 1,600 feet; White and others' No. 2 Donohoe, trying to shut off salt water at 1,355 feet; Wilcox and others' No. 1 Roberts, drilling in blue shale at 1,810 feet; Shappel and others' No. 1 Sisk, drilling at 1,530 feet; Brewer and others' No. 1 Henson, showing a little oil and drilling at 1,980 feet; Camp Oil & Gas Co.'s No. 12-B Douglas, drilling at 400 feet; Elliott and others' No. 2 Jennings, drilling in hard rock at 1,580 feet; Gwynn and others' No. 1 Waggoner, drilling at 1,545 feet; Hammond and others' No. 1 McCarty, drilling at 900 feet; Hill and others' No. 10 Overby, drilling at 100 feet; Humble Oil & Refining Co.'s No. 1 Kemp and Allen, reaming for casing at 1,600 feet; J. J. K. Oil Co.'s No. 1 Henson, reaming for 6⅝-inch casing at 1,580 feet; Magnolia Petroleum Co.'s No. 8 Abernathy, drilling at 980 feet; No. 10 Douglas, reaming to test at 1,045 feet; No. 3 Pere Waggoner, showing 15 bbls. of oil daily and rigging to pump at 1,665 feet; No. 39 Rio Bravo, drilling in shale at 1,400 feet; Murray Hodges, pulling 6⅝-inch casing, sand and others' No. 1 fee, drilling an oil sand at 955 feet; Parker and others' No. 1 showing oil at 1,825 feet; Petroleum Production Co.'s No. 10 Maer, drilling at 1,410 feet; Ryan Petroleum Co.'s No. 26 Nance, drilling at 800 feet; Section Two Oil Co.'s No. 4 Burnett, showed 175 bbls. of oil in 24 hours and will be completed at 1,595 feet; Gresham and others' No. 2 Burnett, drilling at 1,848 feet; Texhoma Oil & Refining Co.'s No. 4-A Burnett, cementing 6⅝-inch casing on top of oil sand at 1,800 feet; No. 10-B Burnett, swabbed 45 bbls. in 24 hours at 1,800 feet; Underwood Drilling Co.'s No. 8 Maer, drilling at 1,500 feet; No. 1 Watkins, drilling at 400 feet.

Archer County Completions

Carter and others' No. 5 White, 175 bbls. at 1,600 feet; Everts and others' No. 1 Miller, dry at 1,650 feet; Humble Oil & Refining Co.'s No. 1 Pease, 30 bbls. at 1,475 feet; Kentucky Oil Co.'s No. 4 Parrish, 80 bbls. at 1,500 feet; Robertson and others' No. 1 White, 150 bbls. at 1,640 feet; Sanderson and others' No. 1 Perkins, dry at 720 feet; White and others' No. 1 Andrews, dry at 1,580 feet; Consolidated Oil Co.'s No. 1 Beardon, 80 bbls. at 1,090 feet; Holmes and others' No. 1 Wilson, dry at 1,435 feet; Jeffers and others' No. 2 Hausler, 25 bbls. at 1,120 feet; Lowery and others' No. 3 Harbison, 100 bbls. at 1,330 feet; Murchison and others' No. 1 Echols, 40 bbls. at 1,215 feet; Lee Wilson and others' No. 1 Beardon, 200 bbls. at 1,085 feet; same company's No. 2 Beardon, 250 bbls. at 1,075 feet.

Stephens County Completions

Magnolia Petroleum Co.'s No. 2 Brown, 150 bbls. at 4,000 feet.

Eastland County Completions

Buffington and others' No. 1 Power, dry at 900 feet; Hamilton and others' No. 1 Fox, dry at 1,510 feet; Mogul Oil Corp.'s No. 2 Earnest, dry at 1,528 feet.

Wildcat Completions

Wilbarger County: Winnipeg Oil Co.'s No. 1 Bond, 435 bbls. at 2,095 feet; Wells and others' No. 1 Waggoner, 945 bbls. at 2,017 feet.

Brown County: Leonard Petroleum Co.'s No. 2 Prather, dry at 2,370 feet; Moore and others' No. 1 Westerman, dry at 1,925 feet.

Comanche County: Poe and Wilson's No. 1 Johnson, dry at 3,300 feet.

Throckmorton County: Humble Oil & Refining Co.'s No. 1 Stubblefield, 90 bbls. at 3,195 feet.

Wildcats Drilling

Hutchinson County, Barnum and others' No. 1 Johnson, shut down to drill water well at 2,600 feet; Douglas and others' No. 1 Whittenberg, spudding; Amarillo Oil Co.'s No. 2-B Bivens, drilling in red shale at 1,805 feet; Prairie Oil & Gas Co.'s No. 1 Mrs. Shaw, drilling at 300 feet; Tex-O-Oil Co.'s No. 1 Johnson, showing 7,000,000 feet of gas at 1,175 feet; Western Enterprise Oil Co.'s No. 1 Smith, drilling in lime at 2,400 feet.

Potter County: Amarillo Oil Co.'s No. 1 Warrick, drilling at 895 feet; No. 1 Burch, drilling at 900 feet.

Carson County: American Refining Co.'s No. 2 Burnett, drilling in blue shale at 2,800 feet; No. 3 Burnett, drilling at 1,800 feet; Crosby Oil Co.'s No. 1 Burnett, drilling in red beds at 600 feet; Danciger Oil Co.'s No. 1 Burnett, reaming casing at 2,680 feet; Gates Oil Co.'s No. 1 Burnett, drilling in lime at 2,425 feet; Marland Oil Co.'s No. 1 Burnett, drilling in shale at 1,300 feet; Olsen Brothers' No. 1 Burnett, drilling in lime at 2,410 feet; Silk and others' No. 3 Burnett, trying to drill by pipe at 2,906 feet; The Texas Co.'s No. 1 Mary Burnett, trying to set 6¼-inch casing at 2,945 feet; No. 4-B Burnett, showing 90 bbls. daily and drilling at 2,965 feet.

Gray County: Anderson and others' No. 1 Bradford, drilling at 200 feet; Dilliard and others' No. 1 Henry, set 12½-inch casing at 500 feet; Holmes and others' No. 1 Moore, drilling in red beds and salt at 1,230 feet; The Texas Co.'s No. 1 Saunders, fishing for tools at 2,805 feet; Wilcox Oil Co.'s No. 1 Wilson, drilling in lime and broken sand at 3,160 feeet.

Wilbarger County: Bridwell and Heydrick's No. 1 Stephens, drilling in brown shale at 985 feet; Castleberry and others' No. 1 Bowers, drilling in soft rock at 920 feet; Magnolia Petroleum Co.'s No. 15 Rogers, rigging to pump oil sand at 1,508 feet; No. 65 H. & T. C., drilling at 505 feet; McCamey and others' No. 1 Stephens, drilling in soft rock at 1,465 feet; Noble Oil Co.'s No. 1 Waggoner, drilling in hard blue shale at 1,870 feet.

Baylor County: Dallas Oil Co.'s No. 1 Shawver, drilling at 1,825 feet.

Clay County: Burton and others' No.

1 Harding, drilling at 1,025 feet; Cumley and others' No. 1 Camp, drilling at 1,525 feet.

Clay County: Atlantic Oil Co.'s No. 1 Scaling, trying to shut off water at 2,880 feet; Lone Star Gas Co.'s No. 6 Panhandle, drilling at 1,560 feet; No. 4 Winters, set 8¼-inch casing on top of gas sand at 1,550 feet; No. 5 Lockridge drilling at 1,160 feet; O'Neil and others' No. 1 Ross, drilling in hard rock at 1,675 feet; Piedmont Oil Co.'s No. 1 Dean, drilling at 735 feet; Summers and others' No. 1 Parker, drilling at 790 feet.

Montague County: Guarantee Fund Oil Co.'s No. 1 Jordan, drilling in shale at 3,015 feet; Texhoma Oil & Refinings Co.'s No. 1 Cate, drilling at 765 feet; The Texas Co.'s No. 2-A Gist, running 10-inch casing at 709 feet; Wood and others' No. 2 Summerour, drilling in hard rock at 2,000 feet.

Grayson County: Johnson and others' No. 1 Martin, drilling at 840 feet.

Garza County: Blackwell and others' No. 1 Boren, has 200 feet of green oil in hole and drilling at 2,034 feet; Mitchell and others' No. 1 Connell, drilling in blue shale at 1,700 feet.

Shackelford County: Haile and others' No. 1 Reynolds, spudding; Kellogg Oil Co.'s No. 1 Sedwick, cleaning out after shot at 3,870 feet; Magnolia Petroleum Co.'s No. 4 George, running 10-inch casing at 1,625 feet; McMahon and others' No. 2 Lynch, hole full of water and drilling at 3,890 feet.

Palo Pinto County: Strawn Oil Co.'s No. 2 fee, showing oil and water and drilling at 3,100 feet; Pender Production Co.'s No. 2 Slemmons, spudding.

Callahan County: Blair and others' No. 5 Cathey, drilling in blue shale at 1,500 feet; Dutton and others' No. 6 Cathey, drilling at 800 feet; Kellogg Drilling Co.'s No. 1 Snyder, drilling in shale at 2,100 feet; Poe and Wilson and others' No. 4 Bryson, drilling in soft rock at 1,000 feet; Prewitt and others' No. 1 Bailey, drilling in blue shale at 1,900 feet; No. 1 Crane, drilling at 1,100 feet; No. 1 White, drilling in brown shale at 1,670 feet; No. 1 Windham, drilling at 1,200 feet; Shackelford and others' No. 1 Allen, drilling in soft blue shale at 1,810 feet.

Mitchell County: Eddleman and others' No. 1 Gist, fishing for bit at 2,850 feet; Harris and others' No. 1 Brown, showing oil and gas and set 8¼-inch casing at 370 feet; Humphreys Oil Co.'s No. 1 Coleman, fishing for 10-inch bit; Morrison and others' No. 1 Kynerd, drilling at 2,000 feet.

Brown County: Anderson and others' No. 1 Wheeler, drilling in shale at 2,580 feet; Avery and others' No. 3 Cox, cleaning out at 2,540 feet; Davis and others' No. 1 Newlin, drilling oil sand at 1,250 feet; Gully and others' No. 1 Cox, drilling in soft rock at 565 feet.

Comanche County: Cox and others' No. 1 Sturkie, drilling at 700 feet; Fain and others' No. 1 McKeehan, drilling in blue shale at 1,775 feet.

Reagan County: Arkansas Fuel Oil Co.'s No. 1 University, fishing for casing at 2,535 feet; Big Lake Oil Co.'s No. 12 University, drilling in hard lime at 2,475 feet; No. 13 University, drilling in mud at 530 feet; No. 15 University, drilling in shale at 905 feet; Crockett Drilling Co.'s No. 1 University, shut down for repairs to boiler at 750 feet; Texon Land & Development Co.'s No. 2 University, drilling in lime and showing oil around 3,000 feet.

PRODUCTION REPORT

Week Ending October 16, 1924

Barkburnett	
Barkley & Meadows	1,070
Humble Oil & Ref. Co.	495
Gulf Production Co.	820
Magnolia Petroleum Co.	3,050
McMahon Oil Co.	350
Panhandle Oil & Ref. Co.	330
Prairie Oil & Gas Co.	20
Sinclair Oil & Gas Co.	70
The Texas Co.	540
Texhoma Oil & Ref. Co.	425
Miscellaneous	10,705
Total	17,875
Electra	
Empire Gas & Fuel Co.	1,220
Humble Oil & Ref. Co.	200
Griswold Oil Co.	365
Gulf Production Co.	530
Magnolia Petroleum Co.	4,010
McMahon Oil Co.	210
Panhandle Oil & Ref. Co.	80
The Texas Co.	4,010
Texhoma Oil & Ref. Co.	2,020
Miscellaneous	7,180
Total	20,225
Iowa Park, Etc.	
Griswold Oil Co.	110
Gulf Production Co.	40
Humble Oil & Ref. Co.	20
Panhandle Oil & Ref. Co.	100
Texhoma Oil & Ref. Co.	65
Miscellaneous	3,985
Archer County—	
Empire Gas & Fuel Co.	975
Griswold Oil Co.	750
Gulf Production Co.	260
Humble Oil & Ref. Co.	235
Magnolia Petroleum Co.	310
Panhandle Oil & Ref. Co.	825
Prairie Oil & Gas Co.	1,400
The Texas Co.	580
Texhoma Oil & Ref. Co.	2,110
Miscellaneous	21,550
Petrolia—	
Gulf Production Co.	75
Magnolia Petroleum Co.	20
The Texas Co.	65
Miscellaneous	235
Total	33,710
Stephens County	
Empire Gas & Fuel Co.	105
Gulf Production Co.	1,405
Humble Oil & Ref. Co.	1,135
Magnolia Petroleum Co.	765
Mid-Kansas Oil & Gas Co.	1,850
Prairie Oil & Gas Co.	1,055
Sinclair Oil Co.	150
The Sun Co.	450
The Texas Co.	2,040
Texas Pacific Coal & Oil Co.	1,285
Miscellaneous	7,285
Total	17,525
Eastland County	
Gulf Production Co.	355
Humble Oil & Ref. Co.	30
Magnolia Petroleum Co.	540
Panhandle Oil & Ref. Co.	440
Prairie Oil & Gas Co.	640
Sinclair Oil & Gas Co.	550
The Texas Co.	300
Texas Pacific Coal & Oil Co.	910
Miscellaneous	2,920
Total	6,735
Other Fields	
Strawn—	
Texas Pacific Coal & Oil Co.	275
Miscellaneous	485
Moran—	
Empire Gas & Fuel Co.	70
Humble Oil & Ref. Co.	425
The Texas Co.	145
Texhoma Oil & Ref. Co.	155
Miscellaneous	2,350
Coleman County—	
Miscellaneous	20
Brown County—	
Miscellaneous	740
Comanche-Eastland—	
Humble Oil & Ref. Co.	210
Magnolia Petroleum Co.	1,155
Sinclair Oil & Gas Co.	60
The Texas Co.	200
Texas Pacific Coal & Oil Co.	150
Miscellaneous	3,715
Young County—	
Gulf Production Co.	90
Sinclair Oil & Gas Co.	460
Panhandle Oil & Ref. Co.	195
The Texas Co.	50
Miscellaneous	3,090
Mitchell County	1,540
Reagan County	5,800
Jack County	15
Scurry County	5
Carson County	1,960
Hutchinson County	65
Callahan County	1,460
Total	24,885
Total this week	120,955
Total last week	120,515
Gain	440

Archer County Drilling

Petroleum Production Co.'s No. 1 Murrah is ratholing at 1,785 feet; Anderson and others' No. 2 Hughes, drilling at 460 feet; Barkley and others' No. 4 Wilson, testing oil sand at 1,540 feet; Beaudoin and others' No. 1 Coleman, drilling at 960 feet; Bridwell and others' No. 4 Wilson, hole full of oil and standardizing to pump at 1,600 feet; Cameron and others' No. 1 Jackson, reaming at 1,545 feet; Carter and others' No. 1 Wilson, bailing salt water and will drill deeper at 1,530 feet; No. 6-E White, drilling at 1,140 feet; No. 1 Parrish, testing oil sand at 1,613 feet; Dee Brothers' No. 1 White, showing considerable oil and will probably make a commercial well at 1,608 feet; Fletcher Syndicate's No. 1 Cowen, coring oil sand at 1,502 feet; Humphreys and others' No. 6 White, drilling at 300 feet; No. 7 White, underreaming; Jeffers and others' No. 1 Wilson, drilling in blue shale at 1,635 feet; Jetter and others' No. 1 White, drilling at 1,565 feet; Kentucky Oil Corp.'s No. 5-C Parrish, drilling in shale at 1,560 feet; Lane and others' No. 1 White, drilling at 1,410 feet; McDonald and others' No. 1 Sterett, drilling in shale at 1,920 feet; Murchison and others' No. 2 Wilson, coring oil sand and cleaning out at 1,625 feet; Underwood Drilling Co.'s No. 1 Miller, drilling in hard rock at 1,600 feet; Oil Investment Co.'s No. 1 Brown, tested salt water at 1,465 feet; Phillips and others' No. 2 Wilson, setting 6⅝-inch casing on top of oil sand at 1,536 feet; No. 3 Wilson, drilling at 1,435 feet; Featherstone and others' No. 8 Nichols, showing 20 bbls. a day production and cleaning out at 1,618 feet; Robertson and others' Nos. 2 and 8 White, running underreamer; Simms Oil Co.'s No. 1 Parrish, lost casing seat on top of oil sand at 1,586 feet; 2 Parrish, drilling dry sand at 1,587 feet; Sun Oil Co.'s No. 1 Lowery, set 8¼-inch casing on top of dry sand at 620 feet; Staley and others' No. 8-C Wilson, drilling dry sand at 1,590 feet; Woodburn Oil Corp.'s No. 8-A Wilson, drilling in hard rock at 2,690 feet; No. 11-A Wilson, drilling at 480 feet; Carey and others' No. 1 Logan, tested dry at 1,260 feet; Daniels and others' No. 1 Parkey, tested salt water but will drill deeper at 1,590 feet; Evangeline Oil Co.'s No. 1 Farmer, will pump oil sand at 1,273 feet; Magnolia Petroleum Co.'s No. 1 Robertson, running underreamer; Panhandle Oil & Refining Co.'s No. 2 Llewellyn, drilling at 800 feet; R. F. Oil Corp.'s No. 2 Farmer, drilling in blue shale at 1,220 feet; Saunders and others' No. 1 Logan, cleaning out to pump at 1,280 feet; Simms Oil Co.'s No. 1 Falls County school land, drilling at 1,260 feet; Skinner and others' No. 1 Dugan, drilling in shale at 350 feet; Anderson and others' No. 1 Benson, drilling at 740 feet; Burns and others' No. 1 Neal, drilling at 700 feet; Clark and others' No. 2 Echols, drilling in blue shale at 1,150 feet; No. 1 Jenkins, drilling at 1,330 feet; No. 6 Scruggs, drilling at 1,050 feet; Consolidated Oil Co.'s No. 2 Beardon, bailing oil sand at 1,062 feet; No. 4-B Ragle, coring oil sand at 1,065 feet; No. 3-C Ragel, drilling in sand at 1,080 feet; Flowers and others' No. 1 Hayter, has 300 feet of oil in hole and fishing at 1,408 feet; Gwynn and others' No. 1 Wood, drilling at 250 feet; Gresham and others' No. 1 Davis, drilling at 750 feet; Hart and others' No. 1 Cowen, fishing for drill pipe at 1,802 feet; Harvey and others' No. 1 McClennahan, will bail oil sand at 1,168 feet; Jeffers and others' No. 2 Hausler, showing 25 bbls. of oil and some water at 1,130 feet; Maer and others' No. 1 Griffin, building storage with several hundred feet of oil in hole at 1,290 feet; No. 1 Bridwell, drilling at 500 feet; Melat and others' No. 2 Goldsmith, drilling in brown shale at 850 feet; Muse and others' No. 1 Kunkel, drilling second hole at 600 feet; Nebraska Oil Co.'s No. 1 Holesek, drilling in rock at 1,315 feet; Russell and others' No. 1 Benson, will plug around 1,080 feet; Shamrock Oil Co.'s No. 1 Andrews, drilling in shale at 1,120 feet; No. 2 Bowen, drilling at 1,070 feet; No. 6 Campbell, drilling at 750 feet; No. 13-B Richardson, drilling in shale at 1,150 feet; No. 14 Richardson, drilling at 1,315 feet; Sun Oil Co.'s No. 1 Green, drilling at 730 feet; Superior Oil Co.'s No. 1 Cowen, showing oil from sand and shale formation at 1,090 feet; Swastika Oil Co.'s No. 1-B Neal, showing 150 bbls. a day production at 1,104 feet; No. 1 Richardson, standardizing to pump at 1,355 feet; The Texas Co.'s No. 1-B Goldsmith, drilling in blue shale at 1,320 feet; No. 1 Jeske, drilling at 600 feet. Underwood Drilling Co.'s No. 1 Rogers, drilling at 350 feet; World Publishing Co.'s No. 1 Herron, drilling in lime at 1,470 feet.

Young County Drilling

Bryan and others' No. 1 Vernon, repairing rig at 650 feet; Cheney and others' No. 5 Driver, drilling in soft rock at 325 feet; No. 1 Harrison, drilling at 155 feet; Dunn and others' No. 1 Johnson, drilling in hard lime at 3,920 feet; Grant and others' No. 1 Casey, hole full of fluid and underreaming for 6-inch casing at 950 feet; Harvey and others' No. 1 Hill, drilling at 530 feet; Herbert and others' No. 1 Johnson, drilling at 1,750 feet; McGarr and others' No. 1 Johnson, drilling at 3,865 feet; Monroe Production Co.'s No. 1 Cheney, drilling at 520 feet; Miller and others' No. 1 Hume, trying to set 6-inch casing at 3,205 feet; Nash and others' No. 1-B Williams, fishing job at 1,230 feet; Olney Production Co.'s No. 1 Kemp, cleaning out and bailing oil at 1,103 feet; Simms Oil Co.'s No. 1 Willis, drilling in oil sand at 2,580 feet; Stovall and others' No. 2 Stovall, fishing for casing at 3,150 feet; Union Oil Co.'s No. 1 Keithley, fishing for tools at 3,052 feet; Winnipeg Oil Co.'s No. 1 Benson, drilling in blue shale at 1,440 feet.

Stephens County Drilling

Critten and others' No. 7 Cobb, drilling in hard rock at 2,780 feet; Hoffer Oil Corp.'s No. 1 Webb, showing some gas with hole full of water at 2,580 feet; Liner and others' No. 2 Brown, fishing for tools at 3,125 feet; Mid-Kansas Oil & Gas Co.'s No. 13 Hill, drilling in lime at 3,260 feet; No. 14 Hill, drilling at 3,200 feet; No. 5 Hill, drilling at 3,180 feet; No. 3 Lee, spudding; No. 2 Williams, spudding; Pender Production's No. 3 Keel, spudding; Prairie Oil & Gas Co.'s No. 15 Atkins, drilling by tools at 3,263 feet; No. 2 Caldwell, drilling at 2,350 feet; Rainey Buckeye Oil Co.'s No. 2 Walker & Caldwell, showing some oil at 4,080 feet; Snowden & McSweeney's No. 5 Higginbotham, an old well, drilling deeper at 3,175 feet; Swensondale Oil Co.'s No. 1 Echols, showing oil and gas and fishing for tools at 3,223 feet; Texas Pacific Coal & Oil Co.'s No. 5 Rogers, fishing for casing at 4,530 feet; Walker and others' No. 4 First National Bank, swaging casing at 1,750 feet; No. 5 First National Bank, drilling at 1,900 feet; Buckeye Development Co.'s No. 8 Walk-

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News of Mexican Fields

By George Blardone

TAMPICO, Mex., Oct. 18.—Within the past 10 days some 32 wells have been completed in Mexico, only 9 being in the producing column. Of these nine, the largest producer is rated at only 1,500 bbls.; and the total new production can be placed at 4,350 bbls. As usual, the extensive Panuco Pool lead the list of completions with 22 wells finished, seven producers with new production, totaling 3,350 bbls. In the miscellaneous northern fields list there were six completions, with one 500-bbl. producer. In the South Fields there were four completions with one 500-bbl. producer. In the South Fields there were four completions with one 500-bbl. producer. Shades of the days of 1919-1922!

Panuco Completions

In the Panuco Field, the pay completions follow: La Corona Petroleum Co. led off with No. 115, Lot 4, Cacalilao, the 1,500-bbl. well. Over in Lot 1, same sector, its Nos. 131, 133, and 136 were small wells. In the same Cacalilao sector, Lots 4 and 1, it had three failures. In the older sector of the Panuco, its No 93 Ojital came in reckoned good for 1,000 bbls. of fluid at 1,768 feet, the flow showing 2 per cent salt water. It may strip some free oil. International Petroleum Co.'s No. 36, Lot 5, Cacalilao, is rated good for 1,000 bbls. at 2,085 feet; and it finished two dry holes in Lots 5 and 3, same sector. Mexican Sinclair Petroleum Corp. finished No. 7, Lot 2, Cacalilao, for 100 bbls. at 2,002 feet; and it has two dry holes in the same lot. Transcontinental Petroleum Co.'s No. 128, Lot 4 Cacalilao, is good for 300 bbls at 1,535 feet, a shallow well, but the water is so close in that sector that the small production noted is taken and the drill stopped. A failure is recorded for Lot 4, and a salt water well in Lot 2, Williamson and others completed No. 3-B, Lot 4, La Canoa at 2,326 feet, a dry hole.

Other Fields

In Ebano, Mexican Petroleum Co. finished No. 26 Chijol for 500 bbls. at 2,300 feet. In the La Dicha its two offsets to Transcontinental's No. 76 and International Petroleum Co.'s No. 99, two big

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Gulf Coast Oil Operations

By P. L. McGreal

Drop of 3,040 bbls. in daily average. Only a half dozen rigs at Luling. Orange Petroleum Co.'s No. 3 Berwick, deepened, makes 700 bbls. Edgerly Petroleum Co.'s No. 2 Vincent increases to 2,500 bbls. and is thought to have found new sand in southeastern part. United North & South's No. 21 Baker, 1,400 bbls.

HOUSTON, Tex., Oct. 20.—The curtailing of drilling operations in the Gulf Coast pools and Southwest fields is being reflected in a declining daily average in both divisions. This week the estimated daily average gross is off 1,200 bbls. from last week in the Coastal territory and 1,840 bbls. in the Southwest fields. Operations in the Luling Field have been cut down to half a dozen rigs runnng.

The news from Mexico City to the effect that an agreement had been reached between Government officials and American oil operators, and that as a result work in the fields of the Republic would be renewed did not cause Coastal operators to enthuse. It means more competition, added to that already coming from the low gravity Smackover crudes, California and Central American fields.

The estimated daily average gross production in the Gulf Coast region is placed at 84,570 bbls. for the week and in the Southwestern fields at 34,790 bbls. The estimate for each district is as follows:

District—	Gross Bbls.
Batson	1,620
Blue Ridge	800
Barber Hill	130
Big Creek	1,000
Dayton	95
Damon Mound	1,340
Edgerly (La.)	475
Goose Creek	12,100
Humble	5,800
Hull	17,000
Jennings (La.)	815
Markham	100
Orange	11,400
Pierce Junction	280
Spindletop	1,060
Saratoga	1,610
Sour Lake	4,460
Vinton (La.)	5,785
Welsh-Anse La Bute (La.)	90
West Columbia	16,600
Miscellaneous	2,010
Total	84,570
Southwest Fields—	
Luling	27,000
Laredo	4,110
Somerset	2,600
Calliham	585
Rockdale-Minerva	495
Total	34,790
Grand total	119,360
Grand total	122,400
Decrease	3,040

It was an unusually dull week in the coastal region with but 14 wells completed and seven of these were worked over and deepened holes. The new production for the week was 975 bbl., the Orange Pool alone furnishing 750 bbls. of the total from two old wells that were deepened to other sands. Four dry holes are recorded with two salt water wells, one flowing 10,000 bbls. in the Goose Creek Pool. At the close of the week under review three tests were bailing.

In the southwestern fields the completion number seven, with 1,757 bbls. initial output. One well in the Luling Field is credited with 1,400 bbls. of the total initial.

Big Creek Starts Runs

The Gulf Pipe Line Co. started running from the Big Creek Pool, 7 miles south of Richmond, Fort Bend County, through its 6-inch line to Blue Ridge storage. The Gulf Production-Snowden & McSweeney joint interests have approximately 100,000 bbls. in earthen reservoirs and small steel tanks in the Big Creek district and are taking it out at the rate of 6,000 bbls. per day. The line is 18 miles long with a steam pump on the Big Creek end. It was laid in 15 days, or a little more than 1 mile per day. The Gulf-Snowden & McSweeney interests have 6,000 acres under lease at Big Creek and the Gulf Co. has leased the 11,000-acre Moore ranch, 7 miles west of Richmond. The Texas Co. is drilling No. 1 fee, at Big Creek, and J. W. Rich and others have a derrick for No. 2 Hager-Moore. The Gulf Co. is starting two more wells. The Pathfinder Oil Co.'s No. 4 between Big Creek and Damon, is below 735 feet. It is a formation test. The Rycade Petroleum Co.'s No. 1 Nash, off Wisdom Dome, is around 1,550 feet.

Operations in Coastal Pools

In the Goose Creek Pool, the Copeland Oil Co.'s No. 6 Bryan, near the mouth of the creek, is flowing 10,000 bbls. of salt water at 3,250 feet. It will be drilled deeper. Officials of the town of Goose Creek have filed a protest against drilling on locations made in the stream, alleging such operations will interfere with navigation. Barges and tugs now use the creek to bring in supplies from Houston and Galveston. The Gulf Production Co.'s No. 22-A Wright bailed dry at 1,575 feet and the Southern Exploration Co.'s No. 6 Wright is bailing at 1,575 feet.

The Humble Oil & Refining Co. is deepening No. 58 Smith from 3,605 feet. No. 59 is drilling below 3,500 feet and a derrick is up for No. 60 Smith, on the east side, offsetting No. 56, which is flowing 1,000 bbls. and recently extended the limits of the producing area. The Gulf Production Co. has a derrick up for No. 24 Smith and is working over No. 11. Its No. 4 Hirsch in the bay is at 3,400 feet. No. 21-A Wright is drilling below 4,150 feet. A total of 11 rigs are now running in that pool, where ordinarily from 25 to 30 are operating.

Orange Pool

In the Orange Pool, the Gulf Production Co.'s No. 5 Winifree is flowing 50 bbls. by heads at 4,750 feet. It is an old well deepened with 30 feet of strainer set. The Orange Petroleum Co.'s No. 3 Berwick is flowing 700 bbls. at 4,325 feet. It, too, is an old well that was deepened. The Edgerly Petroleum Co.'s No. 10 Carbello, completed last week, is pumping 175 bbls. at 3,360 feet and the Sun Oil Co.'s No. 4 Gunstream is pumping 20 bbls. at 3,525 feet. It was finished last week as a workover.

In the southeast side of the district, the Sun Oil Co.'s No. 5 Brown is below 5,250 feet. The Brownie Babbittee Oil Co.'s No. 4 Brown is sidetracking at 4,025 feet. Its No. 5 McLean is below 4,125 feet. The Gulf Production Co.'s No. 2 Hamman-Consolidated is around 4,575 feet. No. 8 Kishi-Lang is at 4,235 feet and No. 5 Pevito is drilling around 4,500 feet. In Cow Bayou, the Rycade Petroleum Co.'s No. 1-E is around 5,000 feet. No. 5 is below 2,800 feet; No. 8 is at 4,430 feet and No. 14 at 3,560 feet. These are a few of the deep holes drilling in that pool. Others are the Sun Oil Co.'s No. 1 Kato on the northeast side, at 4,605 feet and the Mutual Oil Co.'s No. 3 Chesson, deepening at 4,615 feet. The Humble Oil & Refining Co.'s No. 1 Winifree is rigging as is its No. 21 Chesson and the Gulf Production Co.'s No. 8 Pevito. A total of 19 rigs are now running in the pool.

Hull Pool

In the Hull Pool, the Gulf Production Co.'s No. 7 Searborough, on the north side, is bailing at 3,420 feet. The Republic Production-Houston Oil Co.'s No. 67 Dolbear, a workover, reported last week flowing 300 bbls. by heads, is now pumping 250 bbls. at 2,850 feet.

On the north side, the Gulf Co.'s No. 13 Scarborough is drilling at 2,480 feet. On the northwest, the Mecom Oil Co.'s No. 6 Mecom is deepening at 4,115 feet. On the west, the Humble Oil & Refining Co.'s No. 1 Hannah is sidetracking at 2,765 feet. Depth of original hole was below 4,200 feet. No. 1-B Hannah is drilling at 2,075 feet. On the southwest, the Empire Gas & Fuel Co. has a derrick standing for No. 16 Barngrover. It is the first work the company has done in more than a year. On the south side, the Humble Oil & Refining Co.'s No. 10 Hooks-Spells is at 2,900 feet with No. 18 Guidry rigging. On the southeast, the Gulf Co.'s No. 17 Phoenix is working over and No. 6 Thomas fee is fishing. On the east side of the dome, the Republic Production Co.-Houston Oil Co.'s joint No. 90 is drilling at 3,775 feet and No. 92 at 2,710 feet, with No. 93 at 2,369 feet and No. 94 at 515 feet.

Hardin County Pools

In the Batson Pool, Anderson & Munson's No. 1 Hodges is at 1,415 feet. W. B. Flynn's No. 2 Donohoe is at 1,680 feet. The Ada Belle Oil Co.'s No. 81 Wise is below 800 feet. The Paraffin Oil Co.'s No. 3 BBBC is drilling at 805 feet. The East Batson Oil Co.'s No. 1 Texas Co. is rigging. The Texas Co.'s No. 1 Ott, a wildcat, 7 miles west of the pool, is drilling around 1,700 feet.

In the Saratoga Pool, the Weldon Oil Co.'s No. 7 Kirby was abandoned at 1,775 feet as a salt water well. The Rio Bravo Oil Co.'s No. 312-B is drilling at 1,110 feet. In the Sour Lake Pool, the Lake View Oil Co.'s No. 26 Hardin is pumping 15 bbls. at 1,600 feet. The Sun Oil Co.'s No. 59 Bass & Eastham is a 25-bbl. well at 500 feet. Hankamer & Co.'s No. 1 fee is bailing at 875 feet.

The Lake View Oil Co.'s No. 4 Minor is drilling at 2,710 feet and the Sun Oil Co.'s No. 60 Bass & Eastham at 565 feet. The Texas Co.'s No. 224 fee is working over at 1,675 feet. The Gulf Production Co. is pulling liner from No. 38 Hardin-West at 2,350 feet. J. H. Antillery's No. 2 Rio Bravo is idle at 1,075 feet.

Other Pools

In the West Columbia Pool, The Texas Co.'s No. 81 Hogg is drilling around 2,955 feet and the Humble Oil & Refining Co.'s No. 6 Coon at 3,180 feet.

At Damon Mound, the Sinclair Oil & Gas Co.'s No. 1 Cave, on the northeast side of the dome, is drilling below 4,435 feet in shale. Hamm & Co. are working over No. 1 Bryan, drilled originally by the Atkinson Oil Co.

At Spindletop, Werry & Co.'s No. 1 Trembly is drilling at 505 feet. The Gulf Production Co.'s No. 205 Gladys is rigging. The Rycade Petroleum Corp.'s No. 1 Gladys is sidetracking from 3,010 feet. Original depth of the hole was 3,565 feet.

At Pierce Junction, Snowden & McSweeney's No. 8 Cain is around 2,290 feet. The Gulf Production Co.'s No. 10 Taylor is working over. H. R. Cullen has a location for No. 1 Howe.

At Blue Ridge, The Texas Co. is rigging to deepen No. 12 Robinson, which quit flowing last week, after making 1,200 bbls., 30 per cent water, at 3,905 feet, for two weeks. The Gulf Production Co.'s No. 1 Invincible is drilling at 3,000 feet.

In the Markham Pool, in Matagorda County, the Rycade Petroleum Corp.'s No. 1 Sisk, is drilling around 3,200 feet. It is 300 feet south of production. Its No. 3 Hudson is rigged to start drilling. No. 1 Gray is deepening at 3,295 feet.

South Louisiana Pools

In the Edgerly Pool, G. W. Gray's No. 13 Lilliard is deepening at 2,195 feet.

In the Jennings Pool, W. E. Mount's No. 1 E. Crowley and R. N. Hines' No. 2 Martin were both abandoned in salt water at 2,350 feet and 1,775 feet, respectively. Both were workovers.

The Gulf Refining Co.'s No. 37 Arndault is drilling at 1,625 feet. The Texas Co.'s No. 49 Latrielle is drilling deeper. Green & Sutton's No. 1 S. F. S. is drilling at 745 feet.

New Sand in Vinton Pool

The Edgerly Petroleum Co.'s No. 2 Vincent, in the Vinton Pool, reported last week as flowing 2,000 bbls. at 3,350 feet, increased to 2,500 bbls. during the week. It is an old hole deepened and is believed to have discovered a new sand in the southeastern part of the pool. The same company's No. 13 Harmony is pumping 45 bbls. at 2,410 feet and No. 3 Hebert 15 bbls. at 1,175 feet. Wilson & Brooks No. 3 Parks is a 75-bbl. well at 2,650 feet.

The Vinton Petroleum Co. is drilling No. 13 Vincent at 2,675 feet and rigging No. 14. The Edgerly Petroleum Co.'s No. 2 Lizzo is drilling at 1,435 feet. Wilson & Broach are rigging to drill No. 6 Parks deeper. Marrs McLean is deepening No. 5 Gray at 3,175 feet. The Jupiter Oil & Refining Co.'s No. 1 Weeks is at 1,800 feet and No. 2 Lyons at 3,205 feet. The Edgerly Petroleum Co. is deepening No. 1 Vincent. The Texas Co.'s No. 1-L Gray is at 3,307 feet and No. 26 Gray set casing at 1,300 feet. The Gulf Refining Co.'s No. 33 Star is reaming at 2,100 feet and No. 37 Vincent is rigging to start drilling.

Southwest Fields

In the Luling Field, the United North & South Oil Co.'s No. 21 Baker came in flowing 1,400 bbls. and No. 23 Baker staged a gas blowout on top of the Austin formation. The derrick was demolished and is being rebuilt. No. 23 Baker is on the third row on that lease. They are on the Guadalupe County side. On the Caldwell County side, casing has been set in No. 10 Moore. Ormstead & Deibert set casing in No. 1 San Marcos River bed and are drilling No. 2 at 455 feet.

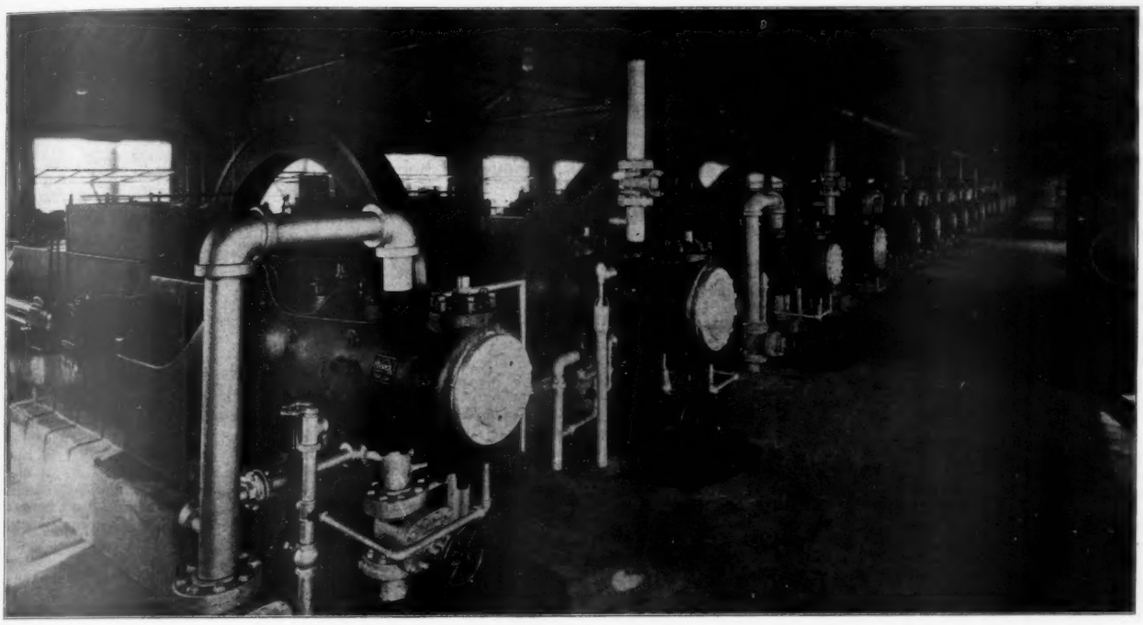
The United North & South Oil Co. has made a contract with the Southern Pacific railroad for 1,000,000 bbls. of Luling crude, according to a statement by E. B. Davis, president of the company. Deliveries on contracts with the Magnolia Petroleum Co. and the Atlantic Oil Producing Co. are being made daily. The company is drilling two deep tests in a search for other sands.

The Magnolia Petroleum Co. is running from 10,000 to 12,000 bbls. per day through its 8-inch welded line to Hull station on its trunk line system in Liberty County.

In the Laredo district, the Magnolia Petroleum Co.'s No. 8 Los Ojulas, drilled to the light gravity sands at 1,900 feet, is a 50-bbl. pumper. The Richmond-Garcia Co.'s No. 8 Los Ojulas is making 75 bbls. at 1,730 feet. Mills Bennett's No. 9 Garcia is good for 150 bbls. initially at 1,698 feet.

The Caroline-Texas Co. has a deep hole in No. 6, drilling around 4,000 feet. The Magnolia Petroleum Co.'s No. 12 Ochoa is drilling in. The Neuva Oil Co. set casing at 1,745 feet in No. 3 Los Ojulas and Olson's No. 5 is drilling. The Rydal Oil Co.'s No. 2 Puig is around 1,565 feet. Morgan and others' No. 1 Wolcott district, is below 1,200 feet. The Witherspoon Oil Co. spudded in No. 1, survey 50, and has a derrick up for No. 1 in Survey 125. Chenault & Allen's No. 1 Gates-Kirkpatrick ranch in the northwestern part of Webb County, is below 825 feet. They are rigging to deepen

(Continued on Page 112)



Whether It's a Race Horse or a Gas Engine Let the Fellow Who *Lives* With Them be the Judge

There he stood with a strap snapped to either side of his halter, tethered midway of the door with head hanging and one eye closed. In our judgment he was a homely example of horse flesh —long, lean and lifeless—which no racing fan would ever pick for a winner. Yet his owner, an experienced old track man, explained that he had brought him under the wire within the money in thirteen races during the season. The point is that our experience with race horses hadn't been intimate enough to teach us to see and appreciate the points that really count in winning a race.

It is somewhat the same with gas engines. One office executive questioned the open form of construction on a Cooper engine on the grounds that it didn't look so well. The very next man to visit the Cooper booth at Tulsa was an operating engineer with half a life time's experience on gas engines. His response was, "You needn't tell me anything about a Cooper engine for I am operating four of them. Yesterday morning I took up the wear in a crank pin box, and had the engine back on the load in exactly four minutes. I am responsible for operation in a gasoline plant and I am getting it with these Cooper engines."

It has been the men with some operating experience who have selected Cooper engines for so many of the larger oil companies during the past year.

Gas engines and compressors from 80 to 1300 B. H. P. for every compressing condition.

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Rocky Mountain Area

By F. B. Taylor

Midwest brings in surprise well in north end Salt Creek, production being from third Wall Creek sand, which was not expected in that area. Big gasser brought in in Utah, estimated as good for 90,000,000 feet, on fire. No oil procured as yet in test on Slater Dome in Colorado.

CASPER, Wyo., Oct. 20.—The report of a new strike on Slater Dome, in northern Colorado by the Ohio Oil Co. has no foundation. The Ohio is putting down a wildcat well at that structure, about 65 miles northeast of Craig and the Moffat Field, but the well is about 1,040 feet and drilling with the hole full of water.

The Haystack well of the Ohio Oil Co. has been ordered abandoned by the officials and this means the abandonment of that structure altogether. This well found water in the Dakota sand where production was expected and then started on down to make a test of the Morrison, a heavy flow of hot sulphur water was encountered and rather than go to the extra trouble of trying to shut this off for a bare chance of finding some black oil in the Morrison, the well was plugged. One other well is still drilling on the Haystack Dome by the Sand Hills Oil Co. of Wyoming and this hole is at 2,960 feet and may get the Dakota sand next week.

The Mac Oil Co. is starting spudding on the third well on the Sheldon Dome in Fremont County, Wyoming. This structure, lying about 50 miles north of Riverton, in the Wind River Valley, is just west of the Maverick Springs Field and the first well drilled there found a good showing of light oil in the first Wall Creek sand, the second and third Wall Creeks also showed some oil but also carried water. The well made about 12 bbls. on the pump and then a second well was drilled northwest of the first. This well was a duster and was abandoned. Now the Mac Oil Co. has taken over the holdings and is starting another hole on Section 15-5-2, southwest of the first well. The well is to be finished in 60 days, according to present plans, and the company hopes to find production in the Wall Creek sands at about 2,500 feet.

The Marine Oil Co. has placed the Mosher No. 4 well on Section 16-39-78 in the Salt Creek Field on production and is taking down the tools. The Taylor No. 8 on Section 20-39-78 is pumping and the Wyokans well on Section 18-40-78 is drilling at 1,980 feet on the northwest side of the field.

Salt Creek Surprise Well

The Midwest Refining Co. brought in a surprise well in the north end of Salt Creek the past week. The Mountain Producers Corp. found a 200-bbl. producer on Section 35-40-79 in the third Wall Creek sand where no third Wall Creek sand was expected. This sand is considered to cover the south end of the Salt Creek Field and a strike was not expected in the north end. The new well is located about 1 mile north of the deep test that found production in the Lakota sand a few weeks ago and this last Lakota well did not find the Third Wall Creek sand.

The big gasser struck by the Utah Oil & Refining Co. at Cisco, Utah, was fired by lightning last week and is now blazing 200 feet in the air. Two cars of boilers were sent to Cisco from Casper to help put out the fire and nothing can be done until the shipment reaches the well. In the meantime the flame appears smoky at times and it is believed that the well is showing some oil with the gas. If this proves true, Utah will have a real oil field.

The refineries at Casper are curtailing their output because of a shortage of obtain water from the Platte River and obtain water from th ePlatte River and about 40 miles up the river is the Pathfinder dam, built by the Government, to conserve the water in the Platte for irrigation during the summer months.

This great dam is located across a deep canyon in the mountains and forms a lake over 100 miles around the water line. During the summer months the dam gates are opened and the water flows down the river valley from which it is taken out by diversion dams in eastern Wyoming and Nebraska and led by ditches to the fields in the farming districts. In the fall and winter the dam is closed so that the full flow of the Platte River above the dam is impounded and this has caused a shortage of water for the refineries at Casper. With the recent rainfall, however, the river is expected to carry plenty of water shortly.

Wildcat Resumes Drilling

The well of the Mutual Oil Co., drilling south of Waltman, Wyo., in Natrona County, on leases of the Consolidated Royalty and the Western Exploration, Section 15-34-87, is drilling at 1,465 feet after having trouble the greater part of the summer. This well is on what is known as the Wallace Dome and is a wildcat that is expected to open up a new field.

The North Casper Creek Field in western Natrona County does not appear to be as good as was expected last Spring. The Midwest test failed to find production as expected in the light oil sands and now it would seem that only black oil production can be found and the chances for this are slim. The Columbus Oil Co. is drilling at 2,200 feet on Section 7-36-81 and this well is expected to definitely show what the structure will do.

The Buck Creek Oil Co. has two wells drilling in the Lance Creek Field in Niobrara County, Wyoming, and expects to finish beofre winter sets in. These two wells will not extend the present development to any extent but are expected to increase the daily field production as they are both close to present producers. Lance is a deep sand field, being about 3,500 feet to the sands and this factor has caused slow drilling there on account of the heavy cost per well.

Montana

The Montana Independent Oil Men's Association met at Great Falls the past week for its semiannual meeting with about 50 members representing the producing and refining interests of the State in attendance. Talks on the oil business in Montana and its future were made by members and it was found that Montana is producing enough gasoline for its own use and also exporting some to other States. The fuel oil burner appeared to have the main interest of the members at the meeting and it was considered that this invention would enable many producers of black oil who have no market now for their production, to dispose of same as soon as the public was taught the use and operation of the oil burner.

The Sunburst Field has now passed the 200 mark in the number of wells producing. There is some agitation noticeable to have the oil from the field placed on a gravity basis for its market rather than a straight run because some of the field produces a lighter gravity crude than others.

The deep well of the Potlatch Oil Co. is still having trouble with cement and has not been able to shut off the water that broke through the casing last week. The O'Haire well, on Section 14-35-2, is a duster and has been pulled out.

Crude Runs for Week

Runs from the Rocky Mountain Fields for the past week:

The Utah Gasser

After a long period of inactivity, Utah is again in the limelight. The Utah Oil & Refining Co., a subsidiary of the Midwest Refining Co., drilled in a monster gasser near Cisco, Grand County, finding the Dakota sand at 1,960 feet and the well is estimated at 90,000,000 feet.

Cisco lies on the east side of Utah on the Rio Grande Western Railroad, and about 20 miles from the Colorado line. The Utah Oil & Refining Co. has a 6,000-bbl. refinery at Salt Lake City and has been wildcatting diligently over Utah and also in Wyoming and Colorado for several years in an effort to obtain crude for the Salt Lake plant. At present the Utah Oil & Refining Co. has production in Salt Creek and takes the bulk of oil from the Lost Soldier Field, also the production from several small operations in Wyoming and Utah like the Spring Valley Field in Uinta County, Wyoming.

This strike is the first gasser ever found in Utah and while the owners would have preferred oil, the production can be utilized if a field develops. The cities of Utah would be glad to have natural gas and a proposition to bring gas from the Wyoming fields to Salt Lake has been considered and the survey made.

Mule Creek Closed Down

The Mule Creek Field in Niobrara County, Wyoming, has closed down for the winter. This operation has about 45 producing wells with a pipe line to the Burlington Railroad and produces a light gravity oil from an average depth of 1,000 feet. The location of the field is such that the rail haul adds a heavy cost to the cost of production and this factor makes the crude cost the producer more than in almost any other field in this region. The field is owned mainly by the Ohio Oil Co. and the Western States Oil & Land Co. and the shipments are usually made to Canada to the Imperial Oil Co. at Regina for refining. If the oil from this field was shipped to Casper it must travel through South Dakota and Nebraska and then back into Wyoming or else northward into Montana and then down into Wyoming.

More Oil at Fort Collins

The Fort Collins well of the Union Oil Co. is showing more oil, as is also the Whittaker well of the same firm that was the discovery well on the Wellington Dome. The Douglas Lake well of the company is due to find the Dakota sands within the next 200 feet and preparations are under way to have everything in readiness for a flow at this location. This well is on the Douglas Lake structure that lies between the Wellington and Fort Collins Domes. It is on NW Section 36-9-69 and will test the third structure of the Fort Collins district, the other two being found productive.

Shipments of oil from the Fort Collins Fields will be started within 10 days, according to statements of officials of the Union Oil Co. This oil will go to Casper for the present, for the account of the Midwest Refining Co. The present production is estimated good for 700 bbls. daily with the wells pinched in all they will stand.

Gas Line Grant Protest

The grant of the Colorado State Public Utilities Commission to the Colorado Gas & Oil Pipe Line Co. of rights to lay pipe lines in the State to the exclusion of others has called forth much adverse comment, the Chamber of Commerce of Denver, the County of Larimer, the Union Oil Co. of California, the City of Fort Collins and others having entered strong protests.

This grant was made to a concern that is not interested in any oil or gas development in Colorado. The firm was incorporated just before the application for the permit was filed and it is now stated the grant gives the pipe line company a monopoly over all of Colorado so far as pipe lines are concerned.

Attorney Paul Gregg for the Union Oil Co. of California, in his statement before the Commission, said in part: "The Union Oil Co. of California has come to Colorado and developed the northern Colorado fields, spending in excess of $1,000,000 in this State. Then what do we find we are up against? We find that the State has granted three men a monopoly

(Continued on Page 112)

News from Fields of Canada

By Victor Lauriston

CHATHAM, Ont., Oct. 18.—In the Okotoks Field, southwest of Calgary, Royalties Oil Co.'s No. 4, deep test, Section 7-20-2w5, this week blew in with a huge flow of gas, unofficially estimated at 21,000,000 feet a day. A small quantity of light oil is spraying out with the gas flow, and the operators are allowing the gas to flow in the chance that the well may drill itself in as a real oil producer. The test was started a year or more ago by the Royalite Oil Co. and last year secured a substantial gas flow in the upper sands. This year it was resumed a deep test. A few weeks ago an additional production of around 1,500,000 feet a day was struck, with a small flow of oil, about 1 bbl. a day. The present gas sand was struek around 3,740 feet. The drill was working in a limestone formation when the gas blew in without warning, lifting the tools some distance in the hole but not blowing them out.

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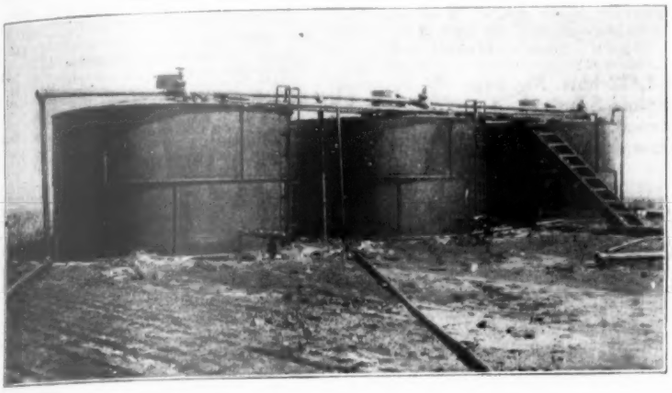
Oil, Ltd., subsidiary, organized some years ago to take over the Dingman properties in the Okotoks Field. It has three producing gassers, including the old Dingman discovery well on Section 6-20-2w5 which ushered in the Calgary boom 11 years ago this month; it also operates a gasoline absorption plant, the residual gas being largely sold to the Canadian Western Natural Gas Co.

Fort Norman

The Imperial Oil, Ltd., drilling crew which has been working this summer on the new test in the Far North, 53 miles below Fort Norman, has come out for the winter. The new test was located just 150 feet over from the discovery well and was carried to 975 feet, being cased to 945 feet with 10-inch casing. Drilling stopped on September 13 as no plans had been made for wintering the drilling crew in the north and it was necessary to re-

(Continued on Page 112)

PERFECTION VAPOR PRESSURE TANKS
WOOD, AND BOLTED STEEL TANKS



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Pay for themselves 12 times a year

You will have to admit that any piece of equipment that pays for itself every month, ceases to be a liability.

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Furthermore his letter is on file in the home office, a facsimile copy of which will be sent you on request. All in all it's a better advertisement for our tanks than we could have written ourselves.

This customer like hundreds of others has found that our tanks have all those qualities that he has a right to expect in lease tanks.

And when we say "QUALITIES," we mean the ability to eliminate evaporation, hold the gravity of your crude and a dozen or more important other features.

There is a representative in your district who will be glad to help you with your storage problems. Don't forget this:

THE PERFECTION TANK IS AN INVESTMENT INSTEAD OF AN EXPENSE.

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BARTLESVILLE ~ OKLAHOMA

Branch offices in all principal active fields

Oklahoma Field Operations

By C. D. Lockwood

Tidal Oil Co's. well on east side of Cromwell Field made 2,422 bbls. for day ending Monday with actual gauge of 175 bbls. hourly for time Sunday. Another good well added to deep sand producers of Tonkawa Field, helping increase production there. Majority of principal fields show declines.

Eclipsing all other Oklahoma field news during the past week was the drilling in of the Tidal Oil Co.'s well in the eastern side of the Cromwell Field, completely upsetting calculations of many careful prognosicators and fulfilling the prophecies of some noted geologists. The well, which is on the Okfuskee County side of the line, is No. 1 King, NW cor. SW SW, Section 14-10-8, was reported last week as making 4,000,000 feet of gas in sand topped at 3,503 feet. First oil was encountered at 3,519 feet and production started off at 60 bbls. an hour. Subsequent deepening raised the output to an actual gauge of 175 bbls. an hour for 2 hours Sunday when the total depth was 3,549 feet. The gauge for the 24 hours ended Sunday morning was 2,780 bbls. and for Monday morning 2,422 bbls. The well was flowing at the rate of 100 bbls. an hour at latest report.

Production of such proportions as this gives an entirely different complexion to the eastern side of the field, and yet the peculiar nature of the area will make the staking of locations a matter of extremely careful consideration. The Gypsy Oil Co. has made a location in the NW cor. SE SW, Section 14-10-8, a quarter of a mile east of the Tidal gusher, and the Tidal has also staked its No. 2 in the NE cor. SW SW, between the two. Others will probably be announced this week.

While the east side was attracting so much attention, the most westerly well, also owned by the Tidal, was still fighting water. After a lapse of a couple of days it was back on production Sunday when it made 50 bbls. Efforts to shut off the water were still going on. The same company was likewise busy in the south end of the field, collecting valuable geological information. Its No. 4 Harjo, NE cor. Section 21-10-8, which was originally completed in the Cromwell sand for 950 bbls. at total depth of 3,537 feet about the middle of July, was drilling deeper and had reached 3,985 feet Sunday.

Other East Side Wells

Two other wells on the east side which are being watched with extreme interest are the Waite Phillips Co.'s No. 1 Tiger, SW cor. NE NE, Section 15-10-8, and the Roxana Petroleum Corp.'s No. 1 Moss, NE. cor. SE NE, same section. Parts of the logs of these wells and a tentative correlation are shown on pages 20-21 of this issue, but it now appears that the latter well had not reached the Cromwell sands as the owners seemed to believe. The drillers did some fast work on it during the latter part of last week and Monday it was down to 3,560 feet where luck turned and a fishing job resulted. It was in shale at total depth. The former well, which was Waite Phillips Co.'s was going slowly because of a cavey hole, and was drilling at 3,540 feet, making little headway. Sand is expected within the next 10 feet.

The Papoose Field should yield some interesting data shortly as several wells in the northeast trend are due in there before long.

The Roxana Petroleum Corp.'s No. 1 Buckner, C NW NE NW, Section 12-8-8, was drilling out cement Monday and was 700 feet off bottom. The hole was filled up to 1,800 feet with cement in an effort to shut off water. When it gets on bottom, the owners should be able to tell what the prospects are for a new field.

West of the Wewoka Field, W. R. Ramsey brought in a good well in his No. 1 Rosanna, C NW NE NE, Section 36-8-7, Seminole County. It is a location south of the Magnolia Petroleum Co.'s producer in Section 25. The Ramsey well topped the sand at 3,105 feet and at 3,125 feet made 752 bbls. in 24 hours.

Another Deep Sand Well

Another good deep sand well was added to the Tonkawa Field, making a total of 38 Wilcox sand producers without counting the Comar Oil Co.'s No. 1-W Ogg, which was not making oil, although it did at one time make a few flows from what was supposed to be the Slick or Wilcox horizon. It was reaming the hole at latest report 40 feet off bottom, with total depth 4,208 feet, in shale. The same company's No. 1-W McCutcheon, NW cor. SW, Section 11-24-1w, was drilling at 4,195 feet in slate. This is on the other side of the Healdton Oil & Gas Co.'s 4,465-foot water well, and if it should prove to be a producer, will likely mean the development of another "high" to the south of the present producing dome. This condition exists in the upper strata of the field, and is believed by some to be present in the 4,000-foot level.

The new producer is the Comar Oil Co.'s No. 3-W C. C. Endicott, C SW NW SE, Section 34-25-1w, an east offset to the Wentz Oil Corp.'s No. 18 McKee. It found sand at 4,130-65 feet, making 2,829 bbls. last Thursday, and 2,397 bbls. on Monday.

The water menace in the Tonkawa Field is apparently growing worse. Monday morning's gauge of the Comar Oil Co.'s No. 5-W C. C. Endicott, NW cor. NE SE, Section 34-25-1w showed only 8 bbls. of oil and 5 bbls. of water, while Sunday's figures were 15 bbls. of oil and 5 bbls. of water. Saturday's account was 264 bbls. of oil and 56 bbls. of water. The same company's No. 1 Gaume, NW cor. NE, Section 2-24-1w, was holding its oil output much better and water seemed to decrease slightly. Saturday it made 2,170 bbls. of oil at 322 bbls. of water; Sunday, 2,250 bbls. of oil and 218 bbls. of water; Monday, 2,141 bbls. of oil and 218 bbls. of water.

Deep Sand Output Higher

An intensive deepening and agitating campaign, combined with the completion of a new well, raised the deep sand output to 80,270 bbls. on Sunday and 81,055 bbls. on Monday. It was 72,282 bbls. Saturday. T. B. Slick's lease comprising 80 acres yielded almost 20,000 bbls. from all sands daily during the latter part of last week.

The fluctuating amount of new work started from week to week apparently indicates no particular trend on the part of Oklahoma operators. For the week ended October 11, the total amount of field operations in Oklahoma amounted to 1,408 including 65 locations, 151 rigs, 802 wells drilling, 317 wells shut down and 73 completions. This represented a gain of 7 locations, 5 rigs and 33 drilling wells. It also showed 15 more wells shut down than on the previous week, and 9 fewer completions. The week's gain in operations was 51.

All of the principal fields of the State with the exception of Tonkawa and Gilcrease-Papoose declined during the past week. The Cromwell Field registered the sharpest drop, losing 2,850 bbls. daily average, although 5 addition wells were in. The daily average production of the field for the week ended October 15 was 37,922 bbls. from 117 wells. The Stroud Field lost 890 bbls. in spite of 2 new producers, the output averaging 8,034 bbls. daily from 60 wells. The Wewoka Field dropped 843 bbls. with no increase in wells, the figures being 7,119 bbls. from 78 producers. The Gilcrease-Papoose Field rose above the 15,000-bbl. mark again after a week's relapse, recording 15,710 bbls. from 53 wells, a gain of 1 well and 979 bbls. production.

Production in Tonkawa

Daily average production in Tonkawa Field for week ended October 15 was as follows by companies:

Company—	Wells	Bbls.
Amerada Petroleum Corp.	36	4,885
Blackwell Oil & Gas Co.	30	4,144
Carter Oil Co.	5	138
Champlin Refining Co.	2	11
Champlin Refining Co. and Twin State Oil Co.	1	15
Comar Oil Co.	339	40,591
Cosden Oil & Gas Co. and Marland Oil Co.	18	300
Gypsy Oil Co.	97	11,470
Healdton Oil & Gas Co.	27	1,390
Wentz Oil Corp.	45	11,283
McMan Oil & Gas Co.	1	5
Pennok Oil Co.	31	8,874
Phillips Petroleum Co.	2	89
Prairie Oil & Gas Co.	12	483
Sinclair Oil & Gas Co.	1	16
Slick and Comar Oil Co.	35	15,062
Southwestern Petroleum Co.	15	538
The Texas Co.	5	63
White Eagle Oil & Ref. Co.	7	163
Total	709	99,421
Total last week	706	98,481
Difference	3	940

Deep Sand Production

Amerada Pet. Corp., Goltry	2	3,884
Pennok Oil Co., Endicott	6	7,668
Comar Oil Co., Beverlin	1	3,118
Comar Oil Co., Pettit	3	5,929
Comar Oil Co., L. Endicott	3	5,552
Comar Oil Co., E. Endicott	6	12,158
Comar Oil Co., Gaume	1	3,068
Comar Oil Co., Ogg	1	25
Gypsy Oil Co., Shawver	4	8,989
Slick, Endicott	7	13,320
Blackwell Oil & Gas Co., McDaniel	1	2,171
Wentz Oil Corp., McKee	3	9,358
Total	37	75,240
Total last week	34	77,231
Difference	3	1,991

Daily average pipe line runs from the field were as follows: Kay County Gas Co., 27,025 bbls.; Ozark Pipe Line Co., 21,779 bbls.; Gulf Pipe Line Co., 10,628 bbls.; Champlin Refining Co., 15,009 bbls.; Bolene Refining Co., 1,610 bbls.; Globe Refining Co., 4,285 bbls.; Moore Refining Co., 3,924 bbls.; Producers & Refiners Corp., 1,383 bbls.; Enid Pipe Line Co., 596 bbls.; Oklahoma Pipe Line Co., 138 bbls.; Empire Pipe Line Co., 1,804 bbls.; Golden Rule Refining Co., 419 bbls.; storage, 10,827 bbls.

Up to and including figures for October 14, the Tonkawa deep sand had produced a total of 4,911,221 bbls. of oil.

Burbank Production

Daily average production in Burbank Field for week ended October 15 was as follows by companies:

Company—	Wells	Bbls.
Carter Oil Co.	214	13,841
Comar Oil Co.	7	186
Cosden Oil & Gas Co.	105	3,474
Devonian Oil Co.	16	243
Gardner Petroleum Co.	20	501
Gypsy Oil Co.	196	6,194
Kewanee Oil & Gas Co.	25	635
Laurel Oil & Gas Co.	16	249
Lorraine Petroleum Co.	15	162
Midland Oil Co.	37	1,953
Mid-Kansas Oil & Gas Co.	39	2,891
Peters Petroleum Corp.	2	1st
Phillips Petroleum Co.	90	8,804
Phillips Petroleum Co. and Delmar Oil Co.	16	3,464
Phillips Petroleum Co. and Skelly Oil Co.	172	6,534
Prairie Oil & Gas Co.	106	3,121
Producers & Refiners Corp.	29	433
Roxana Petroleum Corp.	87	900
Simons-Moore et al	33	154
Sinclair Oil & Gas Co.	146	3,541
Skelly Oil Co.	51	1,207
Tidal Osage Oil Co.	43	731
The Texas Co.	3	32
Twin State Oil Co.	24	1,473
Total	1,433	58,540
Total last week	1,422	60,491
Difference	6	1,951

Kay County Extension

George Boles	3	30
Carter Oil Co.	11	1,441
Comar Oil Co.	19	1,322
Cosden Oil & Gas Co.	16	1,370
Gypsy Oil Co.	19	633
Laurel Oil & Gas Co.	5	500
Mid-Kansas Oil & Gas Co.	10	1,133
Phillips Petroleum Co.	80	3,150
Prairie Oil & Gas Co.	4	111
Pure Oil Co.	6	331
Roxana Petroleum Corp.	8	101
Dye-Tomlinson et al	8	600
Skelly Oil Co. and Phillips Petroleum Co.	20	431
The Texas Co.	16	310
Twin State Oil Co.	15	600
Total	194	14,170
Total last week	194	14,559
Difference	0	389
Total Burbank Field	1,627	72,710
Total last week	1,616	75,267
Difference	6	1,951

Daily average pipe line runs from the Burbank Field during week ended October 15 were as follows: Gulf Pipe Line Co., 8,534 bbls.; Cosden Pipe Line Co., 6,345 bbls.; Kay County Gas Co., 6,470 bbls.; Osage Pipe Line Co., 1,025 bbls.; Oklahoma Pipe Line Co., 22,550 bbls.; Prairie Pipe Line Co., 3,926 bbls.; Sinclair Pipe Line Co., 4,090 bbls.; Moore Refining Co., 1,650 bbls.; Standish Pipe Co., 10,853 bbls.; Empire Pipe Line Co., 919 bbls.; Mid-Kansas Oil & Gas Co., 3,064 bbls.; Twin State Oil Co., 2,220 bbls.; Ozark Pipe Line Co., 1,756 bbls.; total 73,424 bbls.

Total storage in the Burbank Field on October 15, was 13,044,873 bbls.

Kay County

Near Newkirk, in Kay County, the Comar Oil Co.'s No. 1 Williams, NE cor. SE NE, Section 7-27-2, was pumping 10 bbls. after shooting sand at 3,750-75 feet with 60 quarts, total depth of hole 4,024 feet. The Twin States Oil Co. was spudding at 86 feet in No. 1 Youngmeyer, SE cor. 17-29-1w. In the new area northwest of Tonkawa, the Marland Oil Co. had a rig on the ground for No. 1 Vanatta, CSL SE SW NE, Section 1-26-2w, and a rig on the ground for No. 1 Stoker, SE cor. SW, same section, and same company was building a rig for No. 2 North, NW cor. NE, Section 12-26-2w. North of the Tonkawa Field, the McMan Oil Co. lost the hole at 2,530 feet and skidded the rig 25 feet west for No. 1 Warren, SW cor. SE NW, Section 27-25-1w. The Marland Oil Co. had a rig for No. 2 Thomas, SE cor. SW SW, Section 15-25-2w and a rig on the ground for No. 1 Powers, C NE SE NE, Section 21-25-2w.

In the Watchorn district of Pawnee County, the Watchorn Oil & Gas Co.'s No. 10 Miller, an old well drilled deeper, NE cor. SW, Section 33-23-3, made 350 bbls. the first 24 hours from sand at 2,674-94 feet, after going 4 feet deeper. The same company was building a rig for No. 1 Arkeketa, NW cor. NE, Section 9-22-3.

In Jefferson County, the Prairie Oil & Gas Co. was shut down for tankage after swabbing an estimated amount fixed at 350 bbls. the first 12 hours from sand at 1,360-64 feet.

Burbank Field

In the Burbank Field, the Carter Oil Co.'s No. 10 Lyman, C NW SE NW, Section 11-27-5, was considered good for 600 bbls. daily after a 110-quart shot in sand at 2,968-3,008 feet. It made 145 bbls. in 10 hours before the shot. The Midland Oil Co. was rigging up for a No. 1 well in C SW SW NE, Section 12-25-5. The Indian Territory Illuminating Oil Co.'s No. 292, SW cor. NE NE, Section 29-25-8, an old well drilled deeper, struck a flow of gas estimated at 9,000,000 feet in lime at 2,367-87 feet. The Texas Co.'s No. 8, CEL NE NE, Section 29-25-8 skidded the rig 20 feet north, after losing

the tools at 1,065 feet in the first hole.

In Osage County, the Phillips Petroleum Co. shut in its No. 3, NE cor. SE, Section 10-21-9, good for 2,750,000 feet of gas in sand at 2,186-90 feet. The Bartlesville was topped at 2,174 feet. The Alcorn Oil Co. was spudding No. 1, NE cor. SW, Section 24-21-9. T. B. Slick was spudding his No. 1, SW cor. NW SE, Section 13-21-10. Breene and others shot their No. 3, SE cor. NE, Section 22-21-10, with 110 quarts in the Peru sand at 1,581-1,606 feet and it made 150 bbls. in the first 24 hours. Breene, Markham and others had a 10-bbl. well in their No. 1, CNL NE NW NE, Section 27-21-10, in the Bartlesville sand at 1,910-30 feet, after shooting it with 80 quarts.

J. R. Hadley was spudding his No. 2, C SE NW, Section 34-21-12.

In the Hominy region the Marland Oil Co.'s No. 12-A, CSL N half N half, SE, Section 20-23-8, was good for 10 bbls. on the pump from pay sand at 803-809½ fee. The same company's No. 13-A, C SE. Section 20-23-8, was making 4 bbls. of oil and 1,000,000 feet of gas in sand at 810-15 feet. The Beacon Oil Co.'s No. 1, NW cor. SW, Section 21-23-8, was good for 20 bbls. on the pump after plugging back to 2,724 feet for pay sand from 2,662-2,724 feet. In the eastern Osage area, Titus and others' No. 4, CWL NE, Section 23-21-10, was abandoned as dry at a total depth of 2,580 feet.

Creek County

West of Mounds, in Creek County, Wilcox & Oswalt's No. 3 Rogers, NW cor. SW SW, Section 1-16-11, was abandoned as dry at 2,765 feet.

Several wells were finished recently in the Cromwell area. The Sinclair Oil & Gas Co.'s No. 1 Hill, C NW NE NE, Section 9-10-8, was good for 1,092 bbls. daily after hitting first sand at 3,311 feet, oil at 3,359 feet and total depth 3,396 feet. The Roxana Petroleum Corp.'s No. 1 Berryhill, C NE SE NW, Section 10-10-8, was a small producer, making only 165 bbls. the first day, getting first oil at 3,450 feet and total depth 3,470 feet, with top of sand at 3,303 feet. The same company's No. 3 Brown, C NE SW SW, same section, was flowing 2,137 bbls. daily, top of sand 3,428 feet, first oil 3,495 feet and total depth 3,536 feet. The Carter Oil Co.'s No. 3 Neal, C SE NE SW, Section 15-10-8, started at the rate of 593 bbls. daily, first sand at 3,471 feet, oil at 3,458 feet and bottom at 3,555 feet. The same company's No. 4 Neal, C NE NE SW, same section, got sand at 3,460 feet, steel line measurement, oil at 3,495 feet and bottom at 3,568 feet, and well was considered good for 192 bbls. daily. The Cosden Oil & Gas Co.'s No. 1 Harjo, C NW NW SE, same section, was making 590 bbls. from sand at 3,414-3,553 feet. The same company's No. 1 Harjo, SE cor. SW NE, same section, was good for only 50 bbls. from sand at 3,374-3,507 feet.

Cromwell Field

New work in the Cromwell Field includes the Cosden Oil & Gas Co.'s No. 2 Toney, C NE SE SW, Section 4-10-8, which was drilling at 400 feet; the Empire Gas & Fuel Co.'s No. 5 Dunn, CSL SE NW SE, same section, drilling at 270 feet, and same company's No. 6 Dunn, C NW SE SE, was spudding. The Sinclair Oil & Gas Co.'s No. 1, C SW NW NE, same section, was rigging up. The Waite Phillips Co.'s No. 3 Dunn, C SE NE SE, Section 4-10-8, was spudding, and same company was building a rig for No. 4 Dunn, C SW NE SE, same section.

The Pure Oil Co.'s No. 2 Bunner, C SE SW SE, Section 9-10-8, made 135 bbls. in its first 24 hours from total depth of 3,483 feet. Same company's No. 11, C SW NW SE, same section, was fishing at 450 feet, and No. 12, C NE NW SE, was spudding. The Burke-Greis Oil Co.'s No. 3 Brown, C SE SE SW, Section 10-10-8, made 1,100 bbls. from sand at 3,419-3,561 feet. The Carter Oil Co.'s No. 1 Brown, C SW NE SW, same section, was also good for 1,100 bbls. from sand at 3,402-3,528 feet. The Carter's No. 4 Brown, C NE NE SW, same section, was drilling at 315 feet.

About 5 miles south of the Cromwell Field, the Kingwood Oil Co. was drilling its No. 1, C SW NW SW, Section 9-9-8, at 1,160 feet and Atkins & Shaffer were drilling their No. 1 Easup, C NE NE NE, Section 23-9-8, at 200 feet.

The Gilliland Oil Co.'s No. 6 Proctor, C SW NW NE, Section 16-10-8, was one of the best completions of the week, starting off at the rate of 1,100 bbls. daily from sand at 3,490-3,540 feet. The Cosden Oil & Gas Co. was drilling at 280 feet in No. 1 Carbage, C SE NE SW, Section 35-10-9, in the new Papoose area of southern Okfuskee County.

The Producers & Refiners Corp. was drilling at 740 feet in No. 1 Beaver, C NW NE, Section 15-7-8, near Wewoka, Seminole County.

The Cosden Oil & Gas Co.'s No. 3 Harjo, C NW SW NE, Section 15-10-8, was good for 500 bbls. from sand at 3,409-28 feet. The Powers Petroleum Co. had a rig for No. 1 Scott, C NE NE NE, Section 18-10-8. Shaffer Oil & Refining Co.'s No. 7 Yahola, C SE NE NW, Section 22-10-8, was making 40 bbls. daily while shut down at 3,500 feet.

Mounds District

In the Mounds district of Creek County, Hancock & West had a machine in place for a test on Lot 4, Block 21, SE cor. NE SW, Section 8-16-12. Jones & Cravens were spudding at 300 feet in their well, CEL SW NE SW, same section. The Minnehoma Oil Co. and others abandoned their No. 1-A Penoka, NW cor. NE SW, Section 9-16-12, as dry at 2,462 feet. Thompson & Black's No. 1 Muscokee, NW cor. SE NE, same section, had 1,000,000 feet of gas in sand at 1,882-83 feet. The Riverland Oil Co.'s No. 1-A Maxwell, CEL NE NW, Section 14-16-12, was drilling at 250 feet

In the Stroud area of Lincoln County, The Texas Co.'s No. 2 Barber, SE cor. NE, Section 11-14-6, was abandoned at 4,159 feet after shooting with 80 quarts at 4,142-59 feet and getting 1,500 feet of 17 gravity oil after which a lost liner caused a fishing job that spoiled the hole. J. A. Hull's No. 4-A Benevolent Association, CEL SE NW NW, Section 12-14-6, was plugging water off bottom after making 50 bbls. oil the first 24 hours from sand at 4,038-39 feet. The Roxana Petroleum Corp.'s No. 1 Lewis, CEL SW NE SW, Section 12-14-6, was down to 5 bbls. after making 47 bbls. the first 24 hours from sand at 4,123-65 feet. Wheeler & Webb's No. 2, Lot 6, Block 6, CEL SW NE NW, same section, was making 50 bbls. after a 60-quart shot at 4,071-4,150 feet.

Southern Creek County

The Depew and southern Creek County area was active. The Eastern Oil Co. was still trying to get tools out of the hole at No. 4 Roberts, NE cor. SE, Section 17-15-8, after getting oil at 3,750-3,805 feet and plugging back to 3,804 feet and shooting with 130 quarts after which the well made 30 bbls. C. G. Tibbens' No. 6 Yarhola, NE cor. SE, Section 34-15-8, was making 10 bbls. after a 100-quart shot in sand at 2,489-2,509 feet. Other wells shot recently included: Emery & Sons No. 6, SE cor. NW, Section 2-14-8, 85 bbls., 60-quart shot, sand 2,547-81 feet; Prairie Oil & Gas Co.'s No. 7 Rentie, NE cor. SW, same section, 65 bbls., 50 quarts, sand 2,454-2,512 feet; Independent Oil & Gas Co.'s No. 1 Beaver NW cor. SW, Section 36-14-8, 12 bbls., 80 quarts, sand 2,438-2,452 feet.

R. M. Galer's No. 1 Smith, SW cor. NW NE, Section 29-15-9, was dry at 3,094 feet. The Skelly Oil Co. and Billingslea were spudding No. 1 Lucas, NW cor. NE NE, Section 31-15-9; Phillips Petroleum Co. was spudding No. 1, McIntosh, SW cor. NE, Section 24-14-9, and the Prairie Oil & Gas Co. was spudding No. 1 McIntosh, NW cor. SE, same section.

East of Bristow, the Independent Oil & Gas Co. has a rig up for No. 1 Harrison, NE cor. SW, Section 36-16-10.

Near Davenport in Lincoln County, the Southwestern Petroleum Co. and the Selby Oil & Gas Co. were rigging up a rotary for No. 1 Bagwell, NW cor. SE, Section 3-14-5.

Okfuskee County

In the old 11-11 area, Okfuskee County, the Eagle Picher Lead Co.'s No. 1-A Isaac, C NE NE NW, Section 13-11-11, an old well drilled deeper, was abandoned at 2,756 feet. W. M. Plummer abandoned No. 1 Holmes, CSL SW NE, Section 30-11-11, after drilling 1,215 feet. Fisher & Umburn's No. 1 Cubbie, SE cor. NE NW, Section 29-10-11, was abandoned at 3,410 feet.

The Pulaski Oil Co.'s No. 7 Bruner, SW cor. Section 36-12-13, in Okmulgee County, was good for 8,000,000 feet of gas from sand at 2,160-75 feet. B. Morgan got 1,000,000 feet of gas in his No. 1 Kanard, SE cor. NE, Section 13-11-13, from sand at 1,290-98 feet, while he had a machine in place for No. 2 Kanard, C SE NE, same section.

In Hughes County, the Prairie Oil & Gas Co. got 15,000,000 feet of gas at 2,775-90 feet in No. 1 Harjo, NE cor. SE SE, Section 8-9-10. The Mid-Kansas Oil & Gas Co.'s No. 1, SW cor. NE SE, Section 4-9-11, was showing for 40 bbls. after plugging back for sand at 2,937-46 feet. The Tidal Osage Oil Co. had a 60-bbl. well at No. 3 Baker, SE cor. NW SE, same section, from sand at 2,952-82 feet, total depth 3,017 feet.

Near Wewoka in Seminole County, the Producers & Refiners Corp. was drilling at 250 feet in No. 1, C NW NE, Section 15-7-8. Bowles & Smith were spudded and shut down in No. 1 Roy, C SW SW NW, Section 34-5-6, Pontotoc County. The American Refining Co. was fishing for a bit at 175 feet in No. 1 Curry, C NE NE NE, Section 16-4-6.

Southeast of Muskogee, J. W. Hale's No. 1, SW cor. NW SW, Section 9-14-19, was dry at 1,354 feet. In Haskell County, J. D. Clark was drilling at 700 feet in No. 1 Walls, NE cor. SE SE, Section 27-9-18.

Carter County

Templeman & Frantz were swabbing 80 bbls. daily from a total depth of 3,332 feet in No. 1 Jennings, C SE SE SW, Section 28-1s-3w, Carter County. Wirt Franklin's No. 3 Underwood, C NE SE SW, Section 5-3s-2w, was good for 40 bbls. from broken sand at 2,905-47 feet. Jefferson County, Anderson & Hapgood were shut down for water after spudding 100 feet in No. 1 Seay, C SW SW NE, Section 31-6s-5w. The Amerada Petroleum Corp. had 1,000,000 feet of gas and a hole full of oil at No. 1 Clay, NW cor. SW NE, Section 25-5s-1e, with the bit at a total depth of 1,032 feet.

In Grady County, the Skelly Oil Co. was shut down after cementing 17 feet of surface casing in No. 1 G. Neely, C. SE NE NW, Section 23-5n-8w. The Carter Oil Co.'s No. 1 McCoughty, C NE SW NW, Section 35-5n-8w, was good for 7,000,000 feet of gas, 370 pounds rock pressure, from sand at 1,421-63 feet.

In Stephens County, Winkler and others were drilling at 50 feet in No. 1-A Reynolds, NW cor. SE, Section 22-1s-8w. The C. & O. Drilling Co. had timbers on the ground for No. 1-A Sloan, NW cor. SW, Section 23-1s-8w. The Lone Star Gas Co. was rigging up a rotary at No. 5 Beaver, NE cor. NE SE, Section 24-1s-9w. Anderson & Avant's No. 1 Rainers, CEL NE SW SW, Section 9-2s-7w, was abandoned at 1,590 feet.

Kansas Oil Field News

By C. D. Lockwood

Another Cowley County Field loomed up during the week as a likely rival of the famous Rainbow Bend Field and beyond doubt the most important development of the week in the Kansas fields was the drilling in of a well which was reported last week as having made a good showing. It was the Emerald Oil Co. & Buffalo Trust Co.'s No. 7 Kukuk, SW cor. NE, Section 24-32-4, Winfield Pool of Cowley County, which furnished a real thrill to its owners when it increased to 50 bbls. an hour as a result of deepening to 3,031 feet. Gas sand was topped at 2,981 feet and oil pay was reached at 3,002 feet. The last four feet of drilling was reported to have yielded the best pay and it is probable the well will be further deepened as soon as sufficient tankage has been erected.

The Winfield Pool has four producing sands, the 650-foot horizon producing gas, and the 1,400, 2,300 and 3,000-foot levels yielding the oil. Finding of real gusher production at the greater depth has already started active drilling in the vicinity and it is probable the field will get a real campaign in the coming months, especially as there are still additional possibilities below.

Three offsets to the new gusher have already been started. The Gypsy Oil Co. is building a rig for the west offset and the J. A. Hull Co. has staked a location to the southwest and is rigging up its No. 6 Wallace, the south offset.

Rainbow Bend

Cowley County's other pride and joy, the Rainbow Bend Field, contributed three new wells during the past week, all of which were good producers and one of which extended the producing area half a mile to the north. It was the Waite Phillips Co.-Marland-Independent No. 1 Thurlow, SW cor. SE, Section 17-33-3, the thirteenth well in the pool. It found the pay sand at 3,179-3,207 feet and was good for 600 bbls. The next in was No. 1 Dora Johnson, in the NW cor. NE SE, Section 20-33-3 which made 800 bbls. initially from sand at 3,199-3,230 feet, and was doing 700 bbls. Monday. No. 5 Wertman, NW cor. SW NE, Section 20-33-3, topped the sand at 3,182 feet and was drilled in 30 feet, making 875 bbls. the first 24 hours and was doing 700 bbls. Monday. No. 6 Wertman, a location west of No. 5, was nearing the pay at 3,100 feet. The Waite Phillips Co.'s No. 1 Alexander, SE cor. Section 4-33-3, was also nearing the pay at 2,900 feet. The Phillips-Marland-Independent No. 1 True, NE cor. NW, Section 29-33-3, a quarter of a mile south of No. 2 Glasgow, was having trouble with a fishing job at 3,185 feet.

Interesting Test

A test that is watched with more than ordinary interest is the Gypsy Oil Co.'s No. 1 Poor, in the SW cor. of Section 3-33-3, which was drilling at 3,200 feet. Its interest lies in the fact that it is a NE offset to the Marland Oil Co.'s No. 1 Graham, the first Wilcox sand producer in Kansas and will tell quite a story concerning the future possibilities of that horizon in this locality. The sand is expected around 3,500 feet.

A small showing of oil in Barton County was obtained by the Roxana Petroleum Corp. and H. C. Cooper in No. 1 Everleigh, SE cor. NE, Section 22-18-13w, about 4 miles southeast of Hoisington. The showing appeared good for only about 2 bbls. with the bit a foot in the sand topped at 3,325 feet.

The Oswald Field in Russell County received another setback during the week as the White Eagle Oil & Refining Co.'s No. 1 Dodge, SE cor. SW, Section 29-11-15w, about 3 miles to the north, which was heralded as an important extension, was unable to revive the oil production which was shut off by water. The sand was drilled through at 2,958-72 feet and drilling ceased at 3,004 feet.

In southwestern Butler County, the Derby Oil Co. and others finally abandoned No. 1 Nibel, SE cor. Section 22-29-3, as dry after drilling to a total of 4,030 feet.

Rover & Royer abandoned their No. 1 Wray, NW cor. SE, Section 35-30-5, Cowley County, at 3,120 feet. Vickers and others' No. 1 Ivard, SE cor. NE SE, Section 3-31-5, was dry at 3,510 feet. The Empire Gas & Fuel Co.'s No. 3 Eastman, NE cor. SE, Section 6-31-6, was considered a 150 bbl. well after drilling pay sand from 2,862-72 feet.

In the Rainbow Bend area, the Waite Phillips Co. was spudding No. 1 Johnson, C NE NE SE, Section 9-33-3. The Marland Oil & Gas Co. was rigging up for No. 2 Wright, C SW SW NW, Section 10-33-3, and was spudding at 60 feet with a bad hole at No. 1 Bower, C SW SW NW, same section. The same company was spudding No. 2 Wood, SE cor.

(Continued on Page 113)

California Field Operations

By L. P. Stockman

Falling off in development work in San Joaquin Valley. Midway has 11 new producers in month, several large, and Maricopa seven shallow pumpers. Union Co.'s No. 2 Howard Park, Rosecrans, makes 700 bbls., revealing deep dip to north. Shell Co.'s No. 8 Reyes, Dominguez, makes 889 bbls.

LOS ANGELES., Oct. 18.—There was a slight falling off in development work in the San Joaquin Valley fields during September and the amount of drilling done and the number of new wells finished was smaller than during August. In the Midway Field, 11 new wells were put on production, several being large. The Midland Oilfields, by very efficient drilling, finished three new producers in record time on Section 24-31-23. The company's new wells were Nos. 9, 10 and 11. The latter, drilled to 3,779 feet, was the largest, a 500-bbl. well. No. 9, drilled to 3,829 feet, was good for 425 bbls., while No. 10, completed at 3,822 feet, was good for 415 bbls. The output from all three was practically clean and averaged 26.8 degrees in gravity. A new rig has been erected for No. 12, same section, and work will undoubtedly be well under way within a week or so. On Section 34-31-24 the company is working on two drillers, No. 1-B at 1,610 feet and No. 3 at 4,130 feet.

The North American finished two excellent flowing wells, Nos. 9 and 10, on Section 30-31-24, a Government lease, and increased its producers on this property to 10. The former, brought in from 3,160 feet, was good for 595 bbls. of 26.9 gravity oil, while the latter, No. 10, incidentally the field's banner well, is flowing 1,150 bbls. of the same quality oil from 3,448 feet. Upon their completion, the crews were transferred to Nos. 11 and 12, rigs for which had already been erected, and the two new holes were started immediately. No. 11 is going ahead at 1,218 feet, while No. 12 is making hole at 1,330 feet.

Two Completions Each

The Associated and Pacific each finished two new wells, although the output from the latter's two new producers was several times greater. On Section 31-31-24 the Pacific finished a 400-bbl. well producing 27.1 gravity oil from 3,088 feet. No. 38 on Section 3-32-24 was considerably deeper, but the output, 225 bbls., from 4,050 feet, was somewhat smaller. Judging by indications, No. 40 on this lease should be an early completion as it now shows 4,060 feet of hole. The erection of a new rig, No. 41, evidences the company's intention of further development on this property. The Pacific has seven additional strings of tools in operation on various other leases and will undoubtedly finish some of the holes within a few weeks as they are all in proven territory. On Section 25-31-23, No. 69 is going rapidly at 3,010 feet, while 2 miles away on Section 27-31-23, No. 35 is making satisfactory progress at 2,395 feet. No. 97, on Section 1-32-23, shows an even 3,000 feet of hole, while Nos. 34 and 41, on Section 5-32-24, are going ahead nicely. No. 69 at 2,860 feet on Section 7-32-24, and No. 85 at 3,180 feet on Section 15-32-24 complete the company's present list of drillers. There are, however, some 10 or 12 rigs up and 8 suspended drillers which should be carried to completion when desired. The Associated's two new acquisitions were both small pumpers. No. 32, on Section 35-31-22 was a 125-bbl. well from 1,300 feet, while No. 81, on Section 22-31-23, was good for 60 bbls. from 3,302 feet. The oil from No. 2 was a low grade crude testing 15.3 degrees, while the output from No. 60 was a light refining crude which tested 26.4 degrees in gravity. The Combined Oil Co.'s No. 16, Section 14-31-22, was good for 20 bbls. on the beam, of 13.6 gravity oil from 1,433 feet.

The Balboa Oil Co. was successful in finishing No. 30, on Section 24-31-23, and immediately started work on a new hole, No. 31, at present down 612 feet. The company's latest addition made 286 bbls. of 27.1 gravity oil from 3,227 feet. Although the Honolulu Oil Co. did not actually place any wells on production it has several rapidly nearing completion depths. On Section 4-32-24, No. 71 at 3,880 feet and No. 72 at 3,501 feet, together with No. 21, on Section 6-32-24 at 4,060 feet, should be early completions. On the latter section, in addition to No. 21, the company has three incompleted holes and two active drillers, No. 37 at 2,200 feet and No. 67 at 2,830 feet.

Maricopa

There were seven new wells put on production in the Maricopa Field during September, all comparatively small, shallow pumpers. The General Petroleum, with three new producers, was the largest single contributor. On Section 18-11-23, the company finished No. 313-A, good for 20 bbls. of 12.6 gravity oil from 685 feet. No. 8 Alpine, Section 36-32-23, made 50 bbls. of 14.5 gravity oil from 984 feet. No. 210, on Section 34-12-24, proved to be the company's largest well put on the beam at 735 feet. Its initial pumping was 98 bbls. of 14.1 gravity oil. The B. B. & O. Oil Co.'s No. 29, on Section 28-12-24 and the Berry Holding Co.'s similarly numbered well on Section 34-12-24, were good for 75 bbls. each. The former's new producer was finished at 707 feet, while the latter's well was completed at 898 feet. The Big Ten Oil Co.'s No. 8, on Section 36-32-23 made 85 bbls. of 14.5 gravity oil from 1,122 feet. The completion of this well gives the company six producers on this property and one driller, No. 9, at 680 feet. On the same section, the Surprise Oil Co. finished No. 5 at 1,250 feet and secured a 50-bbl. pumper, the oil testing 13.9 degrees and showing a cut of 3 per cent. At the close of the month the field showed 25 strings of tools in operation and 44 suspended drillers.

Kern River Field

In the Kern River Field, where very little development work has been done during the past several years, the Marland Oil Co. finished No. 1 on the Kern River front and secured a 150-bbl. pumper of 12.9 gravity oil from 2,664 feet. Although the Marland's new well extends this end of the field some little distance it will probably not result in any extensive drilling because of the rather small output. The well is a large one for this field, where the daily average well production is less than 10 bbls. Because of limited development work, there were no new wells added to the producing column in the McKitrick Field during September and only one of the three holes being drilled in that district gives promise of an early completion.

The Standard finished a small upper zone pumper in the Wheeler Ridge district, when No. 12, on Section 28-11-20, was put on the beam. It was good for 78 bbls. of 23.8 gravity oil daily from 2,536 feet. Nos. 10 and 11 on the same property are being carried to the deep zone and may, perhaps, be on production early next month. The company's No. 15 is going ahead at 2,006 feet, while No. 14, on Section 27-11-20, is making hole at 1,535 feet. The General Petroleum's No. 3 at 3,260 feet, on Section 28-11-20 gives promise of becoming the company's third producer within the next two or three weeks. On Section 22-11-20, the Midland Oilfields is still working with its first hole and will attempt to produce from an upper zone following its failure to remove or sidetrack the fish on bottom.

Only one small well was finished at Coalinga, due principally to recent restricted developement work. The Boychester Oil Co. secured a 50-bbl. pumper when No. 1 on Section 18-21-15 was put on the beam. The oil, coming from 3,053 feet, tests 20.2 degrees and shows a cut of about 12 per cent. This hole has been rather costly and its completion has been delayed for several months because of mechanical trouble resulting first from the loss of a bit and later a dropped bailer. Three new wells were finished at Elk Hills during the month, two by the Pacific Oil Co. and one by the Standard. The Pacific's two new producers, Nos. 84 and 101 were both located on Section 25-30-24. The former was good for 126 bbls. of 18.6 gravity oil from 3,048 feet, while the latter is credited with 124 bbls. of 17.9 gravity oil from 3,201 feet. On the same lease, No. 6 at 2,850 feet, No. 8 at 2,930 feet, No. 7 at 2,955 feet and No. 103 at 2,976 feet give promise of resulting in production within the next three or four weeks. The Standard's No. 19 Kern County, on Section 31-30-25 made 190 bbls. of 18.8 gravity oil from 3,190 feet.

Although the Pan-American is running six strings of tools, it was not successful in increasing its list of producers. The company has been pushing these holes ahead quite rapidly in order to finish them before any possible adverse decision could be rendered in the recent court injunction sought by the Government to prohibit all but offset drilling on the company's Government leases. The court, however, in denying the injunction to prohibit drilling and its refusal to appoint a receiver, held that the Pan-American was normally responsible and financially capable of protecting the Government from loss. Drilling in the Lost Hills-Boldridge area was practically at a standstill with very little work being done, except for the drilling of several wildcats.

Rosecrans

The Union added the only new well finished in the Rosecrans district during the week by bringing in No. 2 Howard Park. Its initial production was just about equal to that of the fields discovery well located on this same lease to the northwest. No. 2 Howard Park came in flowing 700 bbls. of 38.1 gravity oil from 4,687 feet. It was finished with a 6¼-inch oil string landed at 4,684 feet after the bit had penetrated only 3 feet into the sand. Just previous to its completion, the well exhibited every indication of being a wet job and preparations were well under way to recement. The completion depth is of particular importance as it indicates a very deep dip in the structure to the north. It is 290 feet higher on the structure than the discovery well, No. 1 Howard Park, finished at 4,977 feet. The very perceptible dip between Nos. 1 and 2 Howard Park indicates the former is very close to the northern edge of the field and makes all the development work in the extreme northern part look exceedingly unfavorable. The company is drilling four additional holes on this lease, Nos. 3 at 4,705 feet, No. 4 at 1,191 feet, No. 5 at 200 feet and No. 6 at 3,334 feet and has erected a rig for No. 7. Unless another separate and distinct structure exists north of this field, the Shell, Pan-American, Julian, Petroleum Midway, Miley, Dabney and Sentinel will undoubtedly have dry holes to their credit. The Marine, which has erected a rig and started drilling on a lease adjoining the Union's Howard Park on the north, has a fair chance of securing production.

Southwestern Section

Neither the Union's No. 1 Trust at 5,143 feet, nor No. 1 Gordon at 4,673 feet, both in the southwestern part of the district, has been showing anything to date and look quite discouraging. No. 2 Trust, at 3,340 feet is more favorably located and has a much better chance of success. In proven territory, in the southern part of the district, the company is running five strings of tools on the Rosecrans lease and one each on the Hursey, Zins and Chandler leases, the latter of which secured a slight showing at 3,925 feet. No. 1 Padelford, drilled to 3,753 feet, started to flow by heads, while a water test was being made on the 8¼-inch landed at 3,730 feet. It is doing about 70 bbls. a day of 32.8 gravity oil which cuts 1 per cent. Because of the small output, it is probable the company will carry it down deeper before listing it as a successful producer.

South of the proven territory, in the southern part of the field, the U. S. Royalties is scheduled to make a production test within a day or two of No. 23, drilled to 4,739 feet. Several core samples between 4,568 feet and 4,675 feet showed a nice cut and the company is quite optimistic over the prospects of securing a commercial producer. E. J. Miley is experiencing unusually good luck with his several holes and should finish at least one some time within a few weeks. On the Athens Community lease, neither No. 1 at 4,880 feet, nor No. 2 at 4,080 feet has had any showings of importance to date. The four Miley-Marland wells, on the other hand, are in proven territory and look good for early production. On this lease, No. 1 is at 3,995 feet, No. 2 at 4,068 feet, No. 3 at 3,696 feet and No. 4 at 3,291 feet. Miley's Pacific Petroleum overcame a bad fishing job in No. 1 and is now going ahead at 4,601 feet in this hole and at 3,360 feet in No. 2. The Bankline Oil Co.'s No. 1 tested wet at 4,698 feet and as a result it is standing cemented. The company is assured of at least a 300-bbl. producer as soon as the water trouble has been eliminated. The General Petroleum has not yet made a test of No. 1 Vaughn, which developed water trouble shortly after its completion a week or so ago. The company, believing the water was coming from bottom, has set a cement plug at 4,732 feet. This well, an offset to the Bankline's No. 1, is also a potential producer. No. 1 Amestoy, in the southwestern part of the field, looks like a dry hole since the 5,535 feet of hole has shown no encouragement to date. Julian's two wildcats are still standing suspended pending field developments, with very little prospects for an early resumption of drilling. The Sentinel's No. 1 Brown is also standing suspended, the company feeling justified in shutting down until something develops that would warrant a continuation of drilling. J. B. Dabney is somewhat undecided as to what policy to follow with his northwest test, carried to 5,206 feet. So far the hole has been devoid of any showings of importance and the chances are that he, too, will suspend operations pending further field developments. In the extreme northern part of the area, the Pan-American is going ahead in No. 1 Anderson at 3,584 feet, while the Shell

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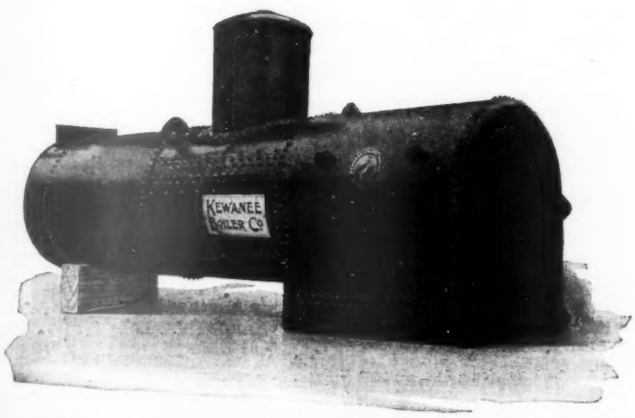

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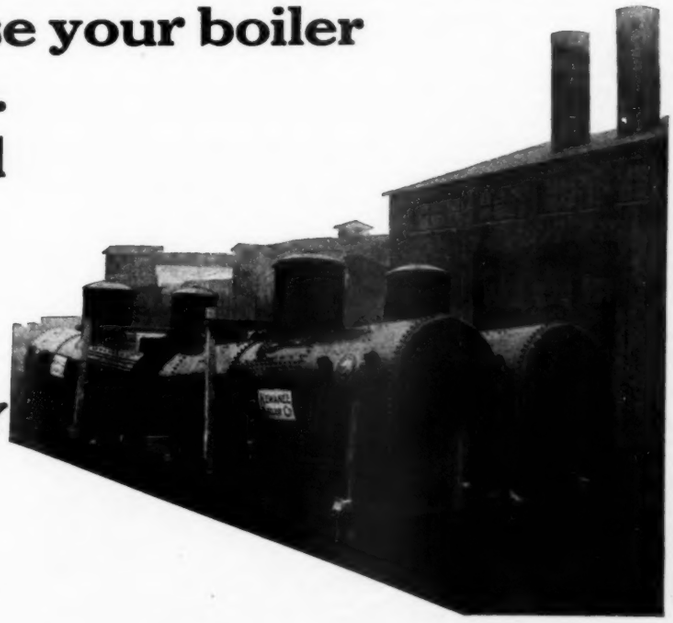

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is making good progress in No. 1 Leonis at 3,877 feet.

Dominguez

The Shell Oil Co. finished the only new producer added at Dominguez during the week when No. 8 Reyes was turned loose. Flowing through a ½-inch bean under a pressure of 370 pounds, it made, during its initial test, 889 bbls. of 31.2 gravity oil which cut 2 per cent. It was drilled to 4,150 feet and finished a 4½-inch oil string landed on bottom. The company's No. 2 Childs in the northeastern part of the field is standing cemented at 4,033 feet. The outcome of this test will be watched because of its proximity to No. 1 Carpenter of the Superior Oil Co., a recent abandonement at 5,397 feet. The Shell started its first well on the recently acquired Manuel lease, adjoining the Associated's De Francis lease on the east. No. 3 is just getting under way and shows 560 feet of hole, while Nos. 1 and 2 are being rigged up. The Marland Oil Co. is making good footage with its three new wells and No. 2 at 3,800 feet. No. 3 at 3,400 feet and No. 4 at 2,550 feet look good for early production, as they are in proven territory.

The United Oil Co. shows 2,020 feet of hole in No. 2 Dominguez and should finish this well as the second producer on the lease at approximately 4,230 feet. No. 4 Callender, in the extreme northern part of the field, is causing the Union considerable trouble because of water. No. 2 Carson, in the opposite end of the district, also proved wet on a test during the week, and another cement job will be necessary at 4,276 feet. The Union's discovery well, No. 1 Callender, is still holding up remarkably well and the tankage record yesterday showed the output to be 760 bbls. The largest well in the field is the Shell's No. 11 Reyes, which is doing a little better than 4,150 bbls. a day. The Shell also has the second largest producer in the field, No. 5 Reyes, flowing a little less than 3,000 bbls. daily.

Torrance

The Superior Oil Co. brought in the only good producer finished at Torrance by completing No. 53 on its Torrance lease. The company's big well gas good for 860 bbls. of 18.2 gravity oil from 3,838 feet. It was finished with a 6¼-inch oil string carrying 271 feet of 60 mesh screen and is flowing through a ½-inch bean under a pressure of 440 pounds. The company has finished plugging No. 1 Torrance, drilled to 3,655 feet, and is abandoning it. The Standard finished one new well, No. 2 Quandt, and returned another to production after cleaning it out. No. 2 Quandt, drilled to 3,650 feet and finished with a 6¼-inch liner, carrying 445 feet of 60 mesh screen, pumped 81 bbls. of 16.4 gravity oil which cut 15 per cent. The production seems to be clearing up and it is quite probable that after flowing for a few days the cut will be materially reduced and the output substantially increased. The company's cleanout job was No. 5 Interstate, which had sanded up a short time ago. Upon its return to production the well pumped 85 bbls. of 15.7 gravity oil which cut 7 per cent. The Petroleum Midway added 90 bbls. a day to its production by finishing No. 2 Dosson after drilling it to 3,450 feet. The oil is practically the same gravity as that produced by the intial well on this lease, 15.2 degrees. The well was finished with a 6¼-inch oil string, carrying 625 feet of 60 mesh screen and 2,880 feet of 2½-inch tubing.

The Sentinel had a little better luck with No. 13 Joughin, although it was a somewhat deeper well than the Petroleum Midway's No. 2 Dosson. The Sentinel's new producer, drilled to 3,808 feet, pumped 108 bbls. of 17.4 gravity oil. The Shell's deep test, No. 2 Kettler, is still dry at 4,896 feet and the prospect of developing deep production is very discouraging. The company is endeavoring to make satisfactory producers of No. 1 Dolores and No. 1 Keystone, both outpost wells. The four redrilling jobs in Nos. 4, 5, 6 and 8 on the B'uemle lease have just about been completed and these wells should be returned to production within the very near future. The Chanslor-Canfield Midway Oil Co.'s deep test, No. 1 Francis, the deepest hole in the field, has just about been given up at 5,370 feet. With the exception of a few slight showings of oil and gas, the well has shown no particular encouragement. No. 100 Del Amo was put on the beam at 3,365 feet and, although it is still dirty and pumping to sump, it gives every indication of resulting in at least a small well. The General Petroleum has finished rigging up No. 1 Poggi, an offset to the Consolidated Mutual's No. 1 Campbell, and is scheduled to spud in tomorrow. Judging by indications, the Petroleum Securities (Doheny) will add three or four new producers to its list on Kleinmeyer lease A during the next week or so, as No. 3 at 3,845 feet, No. 5 at 3,805 feet, No. 6 at 3,580 feet, No. 15 at 3,850 feet and No. 17 at 3,856 feet are all being put on the beam.

Long Beach

The Delaney-Camp Oil Co. is to be congratulated on the excellent manner in which it handled the Bartholomae Oil Co.'s well No. 3, after the latter had been forced to suspend drilling because of financial trouble. The Delaney-Camp interests took over the Bartholomae's old well and after redrilling and deepening it from 4,341 feet to 4,850 feet returned it to production flowing 1,270 bbls. of clean 27.8 gravity oil. It is understood the two concerns will split the production fifty-fifty and this new income should put the Bartholomae back on its feet. The oil, which is of an unusually high gravity, is flowing through a ¾-inch bean under a pressure of 700 pounds. The Federal Drilling Co.'s No. 1 Leedom resulted in only a 200-bbl. pumper from 4,393 feet. The oil tests 22.4 degrees and shows a cut of 15 per cent. The Petroleum Midway's No. 5 Davidson came in making 750 bbls. of fluid from 3,600 feet, but, judging by the unusually large cut, 80 per cent, a water shut off has not been effected. The Marine Oil Corp. is making preparations to put No. 16 on the beam at 5,112 feet but indications point to only a small pumper, at best. The Sam Martinez, anticipating the successful completion of No. 4 Booth, now at 4,450 feet, started work during the latter part of the week on No. 5 and made 800 feet of hole. The Shell Oil Co. was not successful in putting any wells on production during the past seven days, but No. 21 Alamitos at 4,275 feet, No. 3 Bixby at 4,468 feet and No. 6 Jones at 5,000 feet should be on production within a short time.

Huntington Beach

There were two new wells finished and another recompleted at Huntington Beach during the week, all being small. The Pan American put No. 3 Huntington Beach on the beam after plugging back from 4,756 feet to 3,420 feet and secured a 35-bbl. pumper of 19.9 gravity oil which cut 2 per cent. No. 3 Farnsworth of the Standard Oil Co. was an 85-bbl. pumper from 3,568 feet, the oil testing 16.1 degrees and showing a cut of 15 per cent. The Reliance Oil Co. recompleted No. 4 Encyclopedia after plugging back from 4,893 feet to 4,570 feet. The result was a 70-bbl. pumper of 19.4 gravity oil which cut 20 per cent. The Standard Oil Co. started six new wells during the week, Nos. 26 and 27 on Leases A, Nos. 27, 28 and 29 on Lease B and No. 9 on Lease E, No. 1 Conrad of the Holly Development Co., after being plugged back from 4,886 feet to 4,750 feet, looks like it might result in commercial production, as the water trouble seems to have been overcome. The Associated has plugged back No. 36 Miley Kebk to 4,062 feet and about a 250-bbl. well is anticipated. The only new development started at Santa Fe Springs was No. 4 off of the Bandini Petroleum Co., to be drilled into the gas zone. The General Petroleum has gone back into No. 89 Santa Fe and, if the hole cannot be successfully cleaned out, will plug back.

Miscellaneous Drilling

The action of the O'Donnell Refining Co. in suspending operations on No. 2 Strong at Rideout Heights during the week came somewhat as a surprise, although the company has had an unusual amount of hard luck in shutting off water at 4,923 feet. The operations have been costly and it is quite probable the company has suspended operations temporarily in order to create a surplus before doing any more work. Three of the Petroleum Midway's tests are also idle and conditions in the field are not any too encouraging. The Petroleum Midway finished No. 17 Yarnell at Richfield and secured a 340-bbl. pumper of clean 24.5 gravity oil from 4,560 feet. Considerable interest is being manifested in the test being made by the Mohawk Oil Co. in its test in the new Inglewood Field. The well has been drilled to 1,640 feet and if production is secured it will extend the limits of the field over a mile to the southwest. The Standard has staked a location for No. 3 on Los Angeles Investment Lease No. 1, about 450 feet southeast of the discovery well, but has not yet moved in materials. No. 1 on Los Angeles Investment Lease No. 2 is still held up with a fishing job. The Standard has filed an abandonment notice on No. 1 Los Angeles Extension, a few miles away, after going to 6,035 feet. No. 1 Farrell also looks dry and, although it is at present drilling ahead at 5,400 feet, an early abandonment would not be surprising. The Associated has passed the 5,300-foot level in No. 1 McNally at La Mirada and indications point to a dry hole.

Seal Beach

There were no new developments in the Seal Beach area. The Shell's No. 1 Bryant is making about 50 bbls. of oil with each 1,000 bbls. Standard is going ahead in both of its tests at San Emidio, No. 1 on Section 28-11-12 making hole at 1,100 feet and No. 1 on Section 5-10-23 drilling ahead at 110 feet. The General Petroleum is drilling in a yellow sand at 1,450 feet at Commanche Point on Section 31-12-18. In the Lost Hills area, the Marland's No. 1 Ferguson on Section 28-25-21 shows 4,720 feet of hole. On Section 5-27-20, the Standard is drilling in a shale at 2,100 feet. The Union's Rio Bravo test, Section 4-29-25, is drilling in a brown shale at 3,600 feet. The Pan American is still experiencing considerable difficulty in removing the fish from No. 1 Parkford on the Kern River Bluffs at 3,859 feet and, while some progress has been made, complete recovery will require considerable additional time. Miley's No. 1 Krayenhagen on Jacalitos Dome near Coalinga is drilling ahead in a black shale at 4,565 feet. In the Kettleman Hills, the General Petroleum's test is still standing cemented at 5,269 feet. The Ring Petroleum, after several months of work, will attempt to bring in No. 1 Converse in the South Mountain district at Ventura from 3,550 feet. The outlook is for only a small well at best. The Nugent Oil Co., after losing 3,678 feet of hole at Santa Barbara, is skidding the rig for another attempt and will spud in as soon as possible. The Petroleum Midway is still held up with a fishing job in No. 1 Sargent in San Benito County at 5,145 feet. The La Honda Oil Fields Association is erecting two 250-bbl. tanks in San Mateo County, believing its No. 2 at 1,150 feet is a potential proucer.

Oil field operations reported to the State Oil and Gas Supervisor show 22 new wells started, compared with 18 during the previous week, a total for the current year to date of 1,135, compared with 1,131 at the same date last year. Of the 22 notices to drill filed this week, 4 were for wells in the Huntington Beach Field, 1 in the Dominguez Field, 1 in the Rosecrans Field, 5 in the Torrance Field, 1 at Montebello, 1 each in Los Angeles, Ventura, Santa Barbara and San Luis Obispo counties and 6 in the fields of Kern County. There were 27 tests of water shut off made, compared with 30 during the previous week. Deepening or redrilling jobs totaled 15, a decrease of 6 from the corresponding period just previous. Six holes were abandoned. Permits were issued for the following new wells:

Torrance

Chanslor-Canfield Midway Oil Co.—
15-4-14 Torrance 76.
15-4-14 Torrance 78.
Standard Oil Co.—
13-4-14 Dominguez 14.
Superior Oil Co.—
24-4-14 Torrance 55.

Huntington Beach

Standard Oil Co.—
3-6-11 Huntinton A 26.
34-5-11 Huntington A 27.
2-6-11 Huntington B 27.
2-6-11 Huntington E 9.

Dominguez

Shell Co.—
34-3-13 Manuel 3.

Rosecrans

20-3-13 Hub Oil Co. 1.

Los Angeles County

A. W. Duncan—
18-4-11 Bixby Midfield 1.

Montebello

34-1-12 Repetto Hills Petroleum Co. 1.

Santa Barbara County

12-4-25 S. W. Lea, et al 2.

Elk Hills

34-30-24 Belridge Oil Co. 7.

Kern County

Standard Oil Co.—
5-10-22 Kern Co. Leas 4, 1.

Midway

6-32-24 Honolulu Cons. Oil Co. 27.
6-32-24 Honolulu Cons. Oil Co. 47.
6-32-24 Honolulu Cons. Oil Co. 77.
26-31-24 San Jose-Elk Hills Oil Co. 1.

San Luis Obispo County

19-11-25 Carlisle Oil Co. 1.

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Following is a list of tankers, date departed, destination, kind of cargo and amount in barrels:

Agwiboy, October 6, New York, crude	94,621
Beacon Light, October 9, Boston, crude	74,431
Cape Ann, October 9, New York, crude	77,936
Standard, October 9, New York, crude	117,996
Cape Henlopen, October 11, New York, crude	79,130
Coastwise	
Frank H. Buck, October 6, Avon, crude	65,146
Cathwood, October 7, Martinez, crude	76,126
Lebec, October 7, Portland, fuel	68,575
Los Alamos, October 7, Seattle, refined	37,963
Alden Anderson, October 8, Avon, crude	70,694
D. G. Scofield, October 8, Richmond, crude	77,095
La Purisima, October 8, Portland, refined	49,972
R. J. Hanna, October 8, Willbridge, fuel	77,223
La Placentia, October 9, Martinez, crude	77,745
W. S. Miller, October 9, Richmond, crude	74,283
Cathwood, October 11, Martinez, crude	75,190
D. G. Scofield, October 11, Richmond, crude	76,803
J. A. Moffett, October 11, Portland, fuel	62,147
Alden Anderson, October 12, Avon, crude	64,737
Charlie Watson, October 12, Richmond, refined	16,970
W. S. Miller, October 12, Richmond, crude	75,008
Exports	
Santa Maria, October 7, Taltal, fuel	88,824
Deroche, October 8, Balboa, fuel	76,941
San Dustano (Br.), October 8, London, refined	74,610
Foldenfjord (Nor.), October 10, England, refined	78,445
Tejon, October 10, Japan, fuel	66,951
El Lobo (Br.), October 11, Balboa, fuel	43,746
Frank G. Drum, October 12, Honolulu, fuel	68,997
From San Francisco	
Charlie Watson, October 6, San Diego, refined	16,471
Kewanee, October 6, Portland, refined	28,749
Wm. P. Herrin, October 8, Linnton, fuel	52,611
Ambularia (Br.), October 9, Lands End, refined	52,147
El Segundo, October 9, Seattle, refined	32,807
Yankee Arrow, October 10, Taku Bar, refined	89,614
Warwick, October 11, Seattle, refined	37,364
W. S. Porter, October 11, Seattle, fuel	54,296
From Port San Luis	
Oleum, October 9, Eureka, fuel	40,711
Coalinga, October 11, Oleum, crude	74,790

GALICIAN OIL LAND SOLD

Landa formerly held by the Nafta Co. in Eastern Galicia, district of Dolina, have been sold to the Olej Skalny, representing Nobel and Standard interests. The area is approximately 3,500 joch (a joch equals 1.422 acres).

FRENCH SEEK RUSSIAN OIL

Three French representatives of petroleum interests are in negotiation with the Soviet for important oil concessions, principally in the Transcaspian oil districts, and specially the Ural-Emba Field where the Royal Dutch acquired its interest under the Tsar's Government.

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North Louisiana-Arkansas

By M. L. Vaughn

North Louisiana shows increase of 1,210 bbls. a day; drop of 4,210 bbls. daily in Arkansas, mostly in Smackover. Moffat & Murphy complete second well on Pardee lease of Alabama Petroleum Co., southeastern extension of Cotton Valley, flowing 6,000 bbls. through 2-inch choke, 12 per cent salt water.

SHREVEPORT, La., Oct. 20.—North Louisiana production during the past week showed an increase of 1,200 bbls. a day, Bellevue, Caddo light, Cotton Valley and Haynesville, each having a slightly increased output. This increase was more than counterbalanced by a falling off in Arkansas production amounting to 4,210 bbls. a day, for which Smackover heavy was chiefly responsible. Louisiana production averaged 52,850 bbls. a day, and Arkansas 126,070 bbls. a day, a total of 178,920 bbls., distributed as follows:

North Louisiana	
Bellevue	5,070
Caddo light	9,975
Caddo heavy	2,525
Cotton Valley	5,560
De Soto and Red River	4,590
Elm Grove	690
Haynesville	17,165
Homer	7,275
Total	52,850
South Arkansas	
El Dorado	11,910
Nevada County	1,410
Smackover light	33,705
Smackover heavy	76,765
Stephens	2,280
Total both fields	178,920
Decrease, 3,010 bbls.	

A sensational well was completed in the Cotton Valley district last Tuesday when Moffatt & Murphy brought in the second well on the Pardee lease for the Alabama Petroleum Co., with an estimated initial production of 8,000 bbls. a day. The well is located in Section 24-21-10 in the southeastern extension of the field, offsetting Pardee No. 1, the discovery well of this extension which is 1¼ miles southeast of the original pool. Two days after the well came in it was flowing 6,000 bbls. a day through 2-inch choke in a 4-inch flow line and making 12 per cent salt water and 10 per cent b. s., at 2,524 feet.

Two big gas wells were also completed in the Cotton Valley district, the Alabama Petroleum Co. getting a 20,000,000-foot well in No. 1 Freese, Section 21-21-10, at 2,535 feet, and the Gulf Refining Co. a 30,000,000-foot well at 2,545 feet in No. 1 W. Cox, Section 15-21-10. The Gulf's well is spraying between 25 and 30 bbls. of oil and will probably be drilled a little deeper.

With the exception of Union and Ouachita Counties, Arkansas, no completions were made in producing pools in either Arkansas or Louisiana, the only completions being two wildcat wells, both failures.

In Grant Parish, Louisiana, the Grant Parish Petroleum Co. abandoned No. 1 Ball, Section 1-7-1w, between Winnfield and Alexandria, at 2,350 feet. In Nevada County, Arkansas, Greeson and others abandoned No. 1 Lester Mill Co., Section 31-11-20, at 2,101 feet.

Completions, Union County, Arkansas

Completions in the Union County area of the Smackover Field during the past week numbered eight, all producers with an aggregate initial production of 860 bbls.

The Black Duke Oil Co. completed No. 2 Wilson, Section 19-16-15, pumping 175 bbls. at 2,094 feet.

Dyer Brothers completed No. 3 Stout Lumber Co., Section 31-15-16, pumping 130 bbls. at 2,257 feet.

Estes and others completed No. 2 Neely, Section 1-16-17, pumping 55 bbls. at 2,264 feet.

Lyell and others completed No. 6 Fee, Section 3-16-15, pumping 300 bbls. at 1,978 feet.

The Magnolia Petroleum Co.'s No. 2 I. Smith, Section 2-16-17, made a 40-bbl. pumper at 2,266 feet.

Meek, trustee, completed No. 3 Burton, Section 25-16-16, pumping 75 bbls. at 2,129 feet.

The Ohio Oil Co. completed No. 3 Scott, Section 19-16-15, pumping 10 bbls. at 2,095 feet.

The United Central Oil Corp.'s No. 4 Craig, Section 15-16-15, made a 75-bbl. pumper at 2,013 feet.

Ouachita County, Arkansas

Completions in the Ouachita County area of the Smackover Field numbered four, with an aggregate initial production of 350 bbls.

The Magnolia Petroleum Co. completed No. 1 Brown, Section 26-15-17, pumping 35 bbls. at 2,319 feet.

The Sure Oil Co. No. 1 Stringfellow, Section 28-15-16, made a 40-bbl. pumper at 2,246 feet.

The Texas Co.'s No. 6 Berry, Section 33-15-15, is pumping 200 bbls. at 1,997 feet.

Whittiken and others completed No. 4 Anderson, Section 23-15-17, pumping 75 bbls., at 2,363 feet.

Drilling—Union County, Arkansas

The Amerada Petroleum Corp. is trying to pull liner at 1,996 feet in No. 1 Calloway, Section 4-16-15; Angeline Oil Co. has derrick up to No. 1 Scott, Section 12-16-17; Arkansas Fuel Oil Co. drilling rock at 2,453 feet in No. 2 Dumas, Section 29-16-15.

Bargott and others have derrick up for No. 1 Clark, Section 21-16-15; H. E. Clark has drill stem stuck at 1,000 feet in No. 2 Neely, Section 1-16-17; Estes and others set 10-inch casing at 45 feet in No. 3 Freeman, Section 1-16-17, and drilling at 600 feet; Flo Ark Oil Co. bailing casing at 2,278 feet in No. 1 Murphy, Section 36-16-16; E. M. Jones rigging up No. 1 Murphy, Section 26-16-16.

Kouri and other has derrick up for No. 2 Moore, Section 24-16-16; Lanier and other are pulling casing to abandon No. 1 Saxon, Section 16-16-16 at 2,308 feet; Lion Oil & Refining Co., running core barrel at 2,231 feet in No. 5 Graves, Section 3-16-15.

Magnolia Petroleum Co. is shooting casing to abandon No. 2 Campbell, Section 13-16-17, at 2,362 feet; set 6-inch casing at 2,275 feet in No. 3 Campete-Campbell, Section 13-16-17; McPherson Oil Co. has torn derrick down and abandoned location for No. 3 McRea, Section 16-16-15.

The Natural Gas & Petroleum Co. is rigging up to drill No. 1 Frazier, Section 1-18-16; Ohio Oil Co. set 6-inch casing at 2,001 feet in No. 4 Scott, Section 19-16-15; Pure Oil Co., rigging up No. 2 Wilson, Section 20-16-15.

Rutledge and others have derrick up No. 3 Hodges, Section 6-16-16; Simms Oil Co. has derrick up for No. 1 Laney heirs, Section 8-16-16.

Star Oil Co. of Louisiana set 6-inch casing at 2,007 feet in No. 3 Burton, Section 25-16-15; The Texas Co. has 225 feet of fluid in hole and are arranging to pump 9 feet of sand at 2,007 feet in No. 1 Hays, Section 4-16-15; set 15-inch casing at 122 feet in No. 1 McAddo, Section 15-16-15.

United Central Oil Corp. is rigging up No. 5 Craig, and has derrick up for No. 6 Craig, both in Section 15-16-15; Wabler and others are rigging up No. 1 Williams, Section 36-17-14.

Drilling Operations

Ouachita County, Arkansas

The Arkansas Invincible Oil Co. is rigging up No. 3 Myar estate, Section 30-15-16; the Atlantic Oil Producing Co. is arranging to swab 8 feet of sand at 2,300 feet in its No. 3 Jeffus, in Section 25-15-17, and has 1,000 feet of oil in the hole.

Bray Hawthorne is drilling No. 1 Copenhaven, in Section 13-15-17, at 2,125 feet and drilling No. 1 Elliott, in Section 11-15-17 at 2,200 feet; Burton, trustee, set 10-inch casing at 42 feet in No. 10 Hughes, in Section 28-15-16.

J. E. Crosbie is waiting for standard rig with 200 feet of oil and 12 feet of sand in the hole at 2,014 feet in his No. 2 Davidson, in Section 26-15-16; the Duho Oil Co. set 10-inch casing at 60 feet in No. 12 McKenzie, in Section 26-15-16.

The Forest Oil Co. set 8-inch casing at 1,917 feet in No. 5 D. Minor, in Section 29-15-16; Galloway and others have derrick up for No. 5 Hughes, in Section 28-15-16; Hunt and others are drilling their No. 1 Green, Section 23-15-17, at 1,100 feet.

The Magnolia Petroleum Co. set 10-inch casing at 315 feet in No. 1 Clawson, in Section 26-15-17 and is drilling No. 3 Nettie Patton, in Section 32-15-16, at 1,720 feet and No. 4 W. F. Patton, in Section 31-15-16, at 1,860 feet.

The Mazda Oil Co. is drilling No. 1 Fincher, in Section 29-15-16, at 1,850 feet; McCorkle and others are drilling No. 1 Smith, in Section 26-15-17, at 2,240 feet; they have derrick up for No. 2 Smith in Section 25-15-17.

Parish and others are waiting for standard rig with 600 feet of oil and 18 feet of sand in the hole at 2,309 feet in their No. 2 Hardin, in Section 28-15-16; the Pure Oil Co. lost 4½-inch casing seat and is now drilling at 2,312 feet in No. 7 Brister, in Section 28-15-15.

J. D. Reynolds is drilling his No. 3 Brierton, in Section 25-15-17, at 1,200 feet; Ramage and others set 10-inch casing at 31 feet in their No. 3 Jeffus, in Section 25-16-17; Rowe and Harrell are waiting on 6-inch casing at 2,200 feet in their No. 1 D. Minor, in Section 20-15-16.

The Simms Oil Co. has location made for No. E-2 Berg, in Section 30-15-15; set 6-inch casing at 2,017 feet in No. 4 Gaskin, in the same section. Sutton and others set 10-inch casing at 61 feet in their No. 7 Hughes, in Section 28-15-16, and are now drilling at 1,910 feet; they have derrick up for No. 8 Hughes, in the same section; they set 6-inch casing at 2,240 feet and are now drilling at 2,250 feet in their No. 9 Hughes, in Section 28-15-16.

Cotton Valley Drilling

S. S. Raymond and others have gone back into No. 1 Raymond, Section 21-21-10, and are arranging to drill deeper. The well came in on October 3, making 15,000,000 feet of gas with a spray of oil but kept cutting the connections and was shut in at 2,567 feet.

The Fortuna Oil Co. hit the top sand at 2,507 feet in No. 3 J. S. Merritt, Section 14-21-10, and has 500 feet of oil in the hole at 2,524 feet; No. 1 W. Cox, Section 15-21-10, has a fishing job at 2,534 feet; No. 4 L. Merritt, Section 15-21-10, has set 6-inch casing at 2,493 feet, and No. 4 S. J. Merritt in the same section is rigging up to drill.

The Humble Oil & Refining Co. has three rigs running on the Bodcau Lumber Co. lease, Section 24 and 28-21-10, is drilling at 2,280 feet in No. 1 M. S. Davis, Section 24-21-10, and has set 6⅝-inch casing at 2,523 feet in No. 3 Merritt, Section 14-21-10.

The Louisiana Oil Refining Corp. is drilling at 1,835 feet in No. 1 H. C. Gray, Section 28-21-10; Moffatt & Murphy have derricks up for No. 1 Coyle in Section 28-21-10 and for No. 3 Pardee in Section 24-21-10, and the Oil Fields Gas Co. has set 6⅝-inch casing at 2,472 feet in No. B 3 Hope estate, Section 13-21-10.

The Ohio Oil Co. is drilling at 2,200 feet in No. 3 Bank of Cotton Valley, Section 22-21-10; arranging to pump No. 5 Bodcau, setting liner to test No. 6 at 2,540 feet, setting liner to test No. 7 at 2,543 feet, has derrick up for No. 8 and location made for No. 9 in Section 15-21-10.

Among the tests of interest which are being made on the outskirts of the Cotton Valley Pool, the Bethany Oil & Gas Co. is drilling at 400 feet in No. 1 T. R. Wiley, Section 1-22-10, 8 miles north of production.

McDowell and others are drilling at 925 feet in No. 1 Hortman, Section 15-20-10, 6 miles south of the pool.

In the north end of the parish, east of the Spring Hill district, the Butler-McMurray Drilling Co. is rigging up to drill No. 1 Baker in Section 34-23-11, and W. L. Haehnlen, trustee, is rigging up to drill No. 1 Roberts in Section 9-23-10.

Bienville Parish

Borden and others are drilling in broken lime at 2,800 feet in No. 1 Thomas, Section 8-16-9, 4 miles east of Lake Bisteneau.

Bossier Parish

In the Elm Grove gas territory, Palmer & Henby are setting 6-inch casing at 975 feet in No. 1 McCann, Section 31-16-11, and the Palmer Corp. has derrick up for No. B-6 Hodges in Section 25-16-12.

Five miles east of Shreveport, Skannall and others are drilling at 1,650 feet in No. 2 McDade, Section 11-17-12.

In the north end of the parish, in the Spring Hill territory, G. W. Wetherbee has set 8-inch casing at 1,107 feet in No. 1 Bollinger, Section 32-23-11.

Bellevue Field

The Autry Oil Co. tested salt water at 348 feet and is waiting orders in No. 6 Smith, Section 27-19-11; Webb and others tested salt water at 1,070 feet in No. 2 Catlet, Section 27-19-11, and are arranging to drill deeper, and Joe Collins and others have started a well on the Crawford lease in Section 14-19-11, in which they are down 250 feet.

Caddo Parish

In the Pine Island district, the Dixie Oil Co. is drilling at 2,340 feet in No. 43 Robertshaw, and at 1,225 feet in No. 64, Section 13-21-15, and the Tholl Oil Co., formerly the Tarvar Oil Co., is rigging up to drill No. 12 Crye in Section 22-21-15.

In the Caddo Lake district, the Fortuna Oil Co. is arranging to pump No. 12 Doan-Thigpen in Section 5-20-16, and the Gulf Refining Co. is drilling at 4,115 feet in No. 216 Ferry Lake, Section 14-20-16, the deepest test ever made in this territory.

North of the Vivian Field, the La Tex Community Oil Co. is drilling at 3,125 feet in No. 1 Rodessa Oil & Land Co., Section 15-23-16.

The Richardson Oil Co. is making an interesting test north of Cross Lake on the Bockham lease in Section 15-18-15, now down 500 feet.

The Texas Co. is drilling plug in 8-inch at 1,300 feet in No. 1 Federal Jeems Bayou, Section 15-20-16, in the Caddo Lake district, and is arranging to drill deeper in Hobbs A-6, Section 28-21-15 in the Pine Island district, tested dry at 1,530 feet.

(Continued on Page 94)

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INTERNATIONAL (GALVANIZED) STEEL DERRICKS

Kentucky—Tennessee

By Vern T. Whitney

Union Gas & Oil Co. completes 125, 50, 35 and 30-bbl. producers in North Weir Field. Atlantic Oil Producing Co. gets 100-bbl. well in Wolfe County. Combest & Carter well at Sulphur Creek starts 11 bbls. an hour, now doing 8 bbls. per hour. Young Oil Co. has 35-bbl. well in Kettle Creek district.

BOWLING GREEN, Ky., Oct. 20.—A complete checkup of the development work now going on in the entire State of Kentucky shows a total of 170 wells drilling and 21 rigs on locations in 33 separate counties. The western division leads in the number of wells drilling with a total of 93, against 77 in the eastern division.

Barren County leads the State with 25 rigs running, while the North Weir Field, comprising the southwest corner of Lawrence County and the northwest corner of Johnson County, in the eastern division, runs a close second with a total of 22 active drills. The South Weir Field, comprising parts of Johnson and Magoffin Counties, is third with 18 drilling wells.

Week's Work

A summary of the week's work shows 49 completions, the largest number in the past five months, with an initial yield of 884 bbls. from 40 producers and 9 dry holes. Compared with last week, this is an increase of 15 completions, 12 producers, 3 dry holes and 378 bbls. in flush production. The wells were distributed as follows:

County—	Comp.	Wells	Prod.	Dry
Lawrence-Johnson	8	8	282	0
Russell	7	5	87	2
Johnson-Magoffin	6	6	64	0
Barren	6	5	35	1
Allen	6	2	15	4
Lee	5	5	85	0
Owensboro district	2	2	16	0
Cumberland-Monroe	2	2	227	0
Wayne	2	2	15	0
Wolfe	2	1	100	1
Floyd	1	0	0	1
Warren	1	1	6	0
Estill	1	1	2	0
Total	49	40	884	9
Last week	34	28	506	6
Difference	15	12	378	3

During the week, the eastern division showed 25 completions, 23 of which were producers with a flush production of 548 bbls.

North Weir Field

The best well of the week was that of the Union Gas & Oil Co. on its C. K. Dobyne No. 2 farm in District 22. This test, No. 1 on the farm, started off making 125 bbls. from the Weir sand at approximately 807 feet and extended production one-quarter of a mile to the north of the Keaton Pool.

This company's No. 12 Martha Kelley, in District No. 22-A, started off making 50 bbls. at 800 feet. In District No. 32, the Union's No. 18 Andrew Skaggs pumped off at 35 bbls. from the Weir sand; No. 5 D. H. Ferguson, in District No. 33, pumped 30 bbls. from the Weir sand; and No. 7 J. A. Dials in the same district made 15 bbls. on power from the Weir sand.

The Indian Tex Petroleum Co. brought in Nos. 10 and 11 George Gilliam, in District No. 22-A for 10 and 15 bbls., respectively, from the Weir sand.

In District No. 32, the Cumberland Petroleum Co.'s No. 8 William M. Boggs made 2 bbls. after a shot in the Weir sand.

South Weir Field

In the South Weir Field, comprised of parts of Johnson and Magoffin Counties, the Burning Fork Syndicate scored a 20-bbl. pumper in its fifth well on the R. L. Sayler farm, in District No. 31, at approximately 900 feet. Its No. 8 J. T. Patrick, District No. 31, pumped 10 bbls. on power from the Weir sand. In the same district, the Bed Rock Petroleum Co.'s No. 15 J. H. Arnett was estimated at 10 bbls. from the Weir sand.

In District No. 27, the Cumberland Petroleum Co.'s No. 5 J. P. Conley made 4 bbls. on jack from the Weir sand and the Diamond Petroleum Co.'s No. 1, on the Bailey heirs, pumped off at 10-bbls. after a shot in the Weir sand.

In District No. 29, Hudson & Collins got a 10-bbl. starter in their No. 5 H. Grace from the Weir sand at approximately 876 feet.

Lee County

In the Idamay district of Lee County, the Petroleum Exploration Co. & Hupp, Duff & Co. completed No. 8 on the Spence Flannery tract, recently purchased, for 35 bbls. at approximately 1,200 feet. The Petroleum Exploration Co. got a 25-bbl. starter in his initial test on the Ragg Rowland place in the same area at 1,185 feet; its No. 1 Evans pumped off at 2 bbls. from the regular sand in the Idamay district.

In District No. 35, Hupp, Duff & Co. made a 20-bbl. strike in their No. 13 on the Dave Mays farm at approximately 1,200 feet.

In District No. 18, R. M. Smythe and others got a 3-bbl. pumper after shooting No. 5 Medley S. Cole at 1,200 feet.

In District No. 8, Elliott County, T. A. Gleason, trustee, made a 2-bbl. stripper out of No. 5 Millard Ballard at 500 feet, 80 feet below the black shale.

Wolfe County

Wolfe County came to the fore the past week with a 100-bbl. completion at 900 feet in District No. 9. It was the Atlantic Oil Producing Co.'s No. 1 James Roberts. This well proves several locations to the west. In the same district, the Federal Oil Co.'s No. 4 J. D. Spencer was dry and abandoned at about 940 feet.

Floyd County

Tom Demic's No. 3 J. Webb, in District No. 21 of Floyd County, near the hamlet of Hueyville, was dry and plugged at 1,200 feet.

Wayne County Wells

In District No. 13, Wayne County, Head, Brown and others secured a 10-bbl. pumper in No. 3 Upchurch at a total depth of 520 feet. The second Sunnybrook sand encountered at from 497 to 508 feet was treated to a 30-quart shot. On the T. J. Harmon farm, same district, J. C. Brammer's No. 1 pumped 5 bbls. from the second Sunnybrook sand.

Madison County Test

The wildcat being drilled by Thompson and associates on the Williams farm, near Boonesboro Beach, in Madison County, is reported to have found a showing of oil in a sand struck at a depth of 666 feet. Work on the well has been shut down awaiting the arrival of interested parties who wish to see it drilled in.

Western Kentucky

The runs and shipments in the Western Kentucky Field for September show a decrease of 4,341.82 bbls. with a total run of 115,648.53 bbls. The runs are distributed by counties as follows, showing increase and decrease from each county when compared with the August totals.

County—	Runs	Inc.	Dec.
Warren	49,488.75	2,234.79	.....
Allen	29,998.21	.....	3,866.90
Barren	11,990.76	160.44	.....
Hancock-Ohio	11,625.52	588.80	.....
Cumberl'd-Monroe	8,519.28	.....	2,511.19
Hopkins (approx.)	2,270.00	.....	26.50
Simpson	1,756.01	.....	922.26
Total Sept.	115,648.53	2,984.03	7,325.85
Total August	119,990.35		
Difference	4,341.82		

Big Well on Sulphur Creek

The best completion of the week in the western Kentucky division was Combest & Carter's No. 2 on the Huddleston-Payne farm in the Sulphur Creek district of Cumberland County. It was finished at approximately 675 feet in a sand below the Pencil Cave and came in making 11 bbls. per hour naturally. Late reports state that this well is now producing at the rate of 8 bbls. per hour. No. 1 well on this farm made 100 bbls. naturally from a sand encountered at 672 feet when it was drilled in a month or so ago, and extended production 2 miles up Sulphur Creek from the famous A. A. Huddleston farm owned by the Morris Petroleum Co. and the Combest Oil Corp. No. 3 on the Huddleston-Payne farm was shut down awaiting additional tankage that is now being erected as it is showing for an excellent producer.

In the Kettle Creek district on Monroe County, the Young Oil Co.'s second well on the R. L. Coffee tract, completed in the sand below the Pencil Cave at 740 feet, was estimated at 35 bbls. after being shot. No. 3 on the same farm was drilling at 240 feet.

Barren County Completions

Barren County continues to lead in new production in western Kentucky with six completions, five of which were producers. None was sensational, but as they were all drilled to the new sand at 185 feet below the shale, lasting production is assured.

In the Emery-Moore Pool, 3 miles west of Glasgow, the Mazel Oil Co. finished No. 3 Neeley for 12 bbls. at 562 feet; T. L. Gorby's No. 1 G. Lessenberry, west of the Taylor, made 5 bbls. on jack at 467 feet after the sand from 448 to 454 feet was treated to a 30-quart shot. The shale was topped at 310 feet and was drilled through at 454 feet. Ziegler Brothers' Co.'s No. 4 Wynn started off at 10 bbls. bbls. at 536 feet. Six feet of sand was shot with 30 quarts; the Elem Oil & Gas Co.'s No. 4 Wynnn started off at 10 bbls. at a total depth of 425 feet. Sand from 415 to 423 feet was shot with 30 quarts of nitro. On the Oliver Smith farm, adjoining the Neeley place, the Akers Oil Co. finished its No. 15 for 4 bbls. at 432 feet.

A wildcat drilled by the Wood Oil Co. on the Redman farm, 6½ miles northwest of the Emery-Moore Pool, was dry and abandoned at 802 feet. The shale was encountered at from 465 to 522 feet. The sand from 706 to 711 feet was totally dry while the shallow pay, topped at 532 feet, showed nothing but salt water.

Drilling Activities

Emery-Moore Pool: Zeigler Brothers, Scott & Hise's No. 1 Bradford was 146 feet below the shale and drilling; Carter Oil Co.'s No. 2 Gooden was showing for a small pumper at about 502 feet; same company's No. 12 Wininger was making hole at 405 feet, shale being encountered from 268 to 320 feet; Star Oil Co.'s No. 3 Free was drilling at 402 feet, shale from 343 to 393 feet; same company's Nos. 10 and 11 Ritchie were down 514 and 430 feet, respectively; Bishop & Son's No. 2 Bishop was making hole at 330 feet; Rice & George's No. 1 Mrs. Jackman was drilling on top of the pay sand. The shale was topped at 210 feet; T. L. Gorby set 6¼-inch casing at 345 feet in his No. 1 Cassidy. Shale was from 287 to 340 feet; the Mazel Oil Co.'s No. 4 Neeley was being cleaned out after a 30-quart shot from 433 to 439½ feet; Fred Moore's No. 7, on his own land was progressing at 290 feet, 11 feet below the top of the shale; the J. C. S. Oil Corp.'s No. 1 Martin was spudding at 80 feet; F. A. Brendall's No. 1 Martha Oakes was spudding at 64 feet; T. L. Gorby was spudding his No. 2 Lessenberry at 32 feet.

In the Coral Hill district, 6 miles north of Glasgow, Smith & Son were spudding at 34 feet on No. 5 L. H. Nicholas; Porter and others' No. 1 Chitwood were drilling at 330 feet. In other outlying sections of the county seven wells are going down at unknown depths.

Russell County

Recent reports from Creelsboro, in Russell County, show that seven wells have been drilled in, five of which were producers with a flush of 37 bbls.

The Carnahan Oil Co.'s No. 3 W. C. Dalton was finished at 439 feet in the first Sunnybrook sand and has been making 15 bbls. daily on the jack. This completion, with two others on the same farm, serves to connect the Ramsey Creek Pool and the Leach Pool. This concern's No. 4 on the B. F. Leach was shut down at 145 feet on account of water shortage. On the F. Garner farm, the Carnahan Company finished a 5-bbl. pumper from the Sunnybrook formation.

Ridenhour & Co.'s No. 1 F. M. Flatt was dry in the first Sunnybrook sand at 416 feet. However, Mr. Flatt has taken the hole over and will drill it down to the lower Sunnybrook.

Armstrong and others' No. 3 Ed Campbell was making 5 bbls. on power from the lower Sunnybrook sand. The deep test drilled by these parties on the old Gabbard site is shut down awaiting the arrival of a pumping outfit to reduce the salt water. On the Mrs. Coffee tract, Armstrong and his associates got a 7-bbl. pumper on No. 3. No. 1 Coffee was completed about a year ago for 1,000 bbls. naturally.

At Irish Bottom, R. F. Logan's No. 1 L. D. Potts was reported dry in both the upper and lower Sunnybrook sands.

Allen County

In the Gainesville Pool, 10 miles north of Scottsville, O. C. Fletcher's No. 6 J. T. Johnson tested 5 bbls. at 397 feet; W. B. Thompson's No. 1 C. W. Johnson was plugged at 406 feet.

In the Mt. Aerial district, the Lewis Oil Corp. completed No. 14 on the Bourbon Stamps tract for 10 bbls. at a total depth of 413 feet. Nineteen feet of sand was shot with 40 quarts of nitro.

In the Justice Pool, Peerson and others' No. 3 Dodson was dry at 440 feet; Berry and associates' No. 3 on the V. R. Hinton was plugged at 462 feet after the casing was pulled out of the hole. Nos. 1 and 2 on this farm are both fair pumpers.

In the Keen Pool, a dry hole was reported at 320 feet on the Freeley Harris farm being developed by Roy Hinton. The Harris farm adjoins the Alderson tract on which some good production has been secured.

Owensboro District

The Leeper Oil Co. scored its fourteenth straight producer on the Amanda Stewart 55-acre farm in the Pellville section of the Owensboro Field. This well started off making 42 bbls. and settled to a 15-bbl. pumper from the shallow Jett sand.

Nutt & Pyle's No. 1 Ves Haynes, in the vicinity of the Oat Neal lease, made but 1 bbl. on test from the Barlow sand and will probably be abandoned.

Only one completion was reported in Warren County during the week in review. It was H. J. Hobson's No. 4 on the George Rigglewood place in the White Stone Quarry district which tested 4 bbls. after a shot from 440 to 446 feet.

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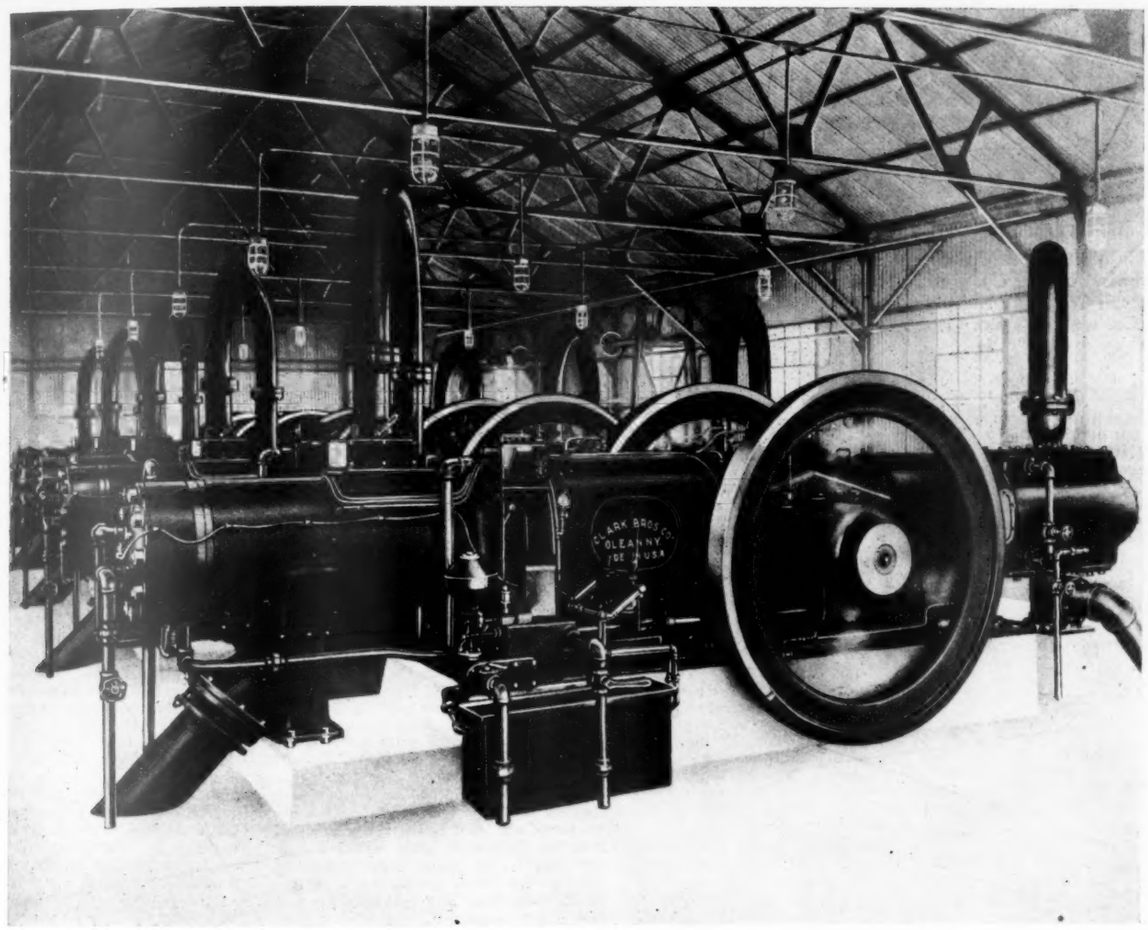

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By D. S. Wakenight

W. F. Whitehill & Co. completion in Licking County, Ohio, flows and swabs 100 bbls. Carter Co. well in Holmes County showing for 50 or 75 bbls. a day. Pure Oil Co. gets 30-bbl. well in Morgan County. Hope Construction & Refining Co. well in Tyler County, West Virginia increases to 80 bbls. when shot.

PITTSBURGH, Pa., Oct. 20.—Operators in the Eastern fields are slowing down. In a few southeast Ohio districts there is some activity but nothing like it should be if the market was higher. Licking County has more new work than any other.

The week's development work was not encouraging. Nearly all the completions came in light pumpers, gassers or dry holes. Fewer wells were completed than the previous week and none of importance as to location. The southeastern Ohio fields furnished all of the features. The effort to develop a Trenton Rock Pool in the vicinity of Newark, Licking County, is regarded as most important. The record for Trenton Rock tests in the vicinity of Newark is two producers and one dry hole. The only well drilling in the Trenton Rock is the Ohio Fuel Supply Co.'s test on the Licking County Fair Grounds, at more than 4,200 feet and slow drilling. They will have more than 200 feet to go before they expect the pay.

Good Producer in Hanover Township

The best producer completed in southeastern Ohio during the week is the M. F. Whitehill & Co.'s No. 3 on the James S. Simpson farm in Lot 13, Hanover Township, Licking County. With what the well flowed and swabbed they recovered 100 bbls. the first 24 hours after shot in the Clinton sand. In Newark Township, the Ohio Fuel Supply Co. got a 2,000,000-foot gas well when it drilled its test on the Mechlin farm into the Clinton sand. This is ½ mile north of Newark. Within the past two months Licking County has come rapidly to the front and is now the most active in southeast Ohio. The shallow sand territory completed only a few wells and the best not better than light pumpers. The only section that has been anything better is York Township, Morgan County, where several wells are due in the sand.

In Lot 12, Hardy Township, Holmes County, the Carter Oil Co. has drilled a second test on the Samuel Franks farm into the Clinton sand and showing for a 50 or 75-bbl. producer. This is 800 feet south of the East Ohio Gas Co.'s second test on the George Galley farm.

York Township, Morgan County, is maintaining its record for better than average shallow sand wells. In Section 29, the Pure Oil Co. has completed a test on the Isaac Smith farm and good for 30 bbls. a day. In the same township, Section 24, the Sun Oil Co.'s test on A. A. Souders farm is a 15-bbl. pumper in the Berea grit. The same company is due in the Berea grit at No. 4 on the Grant Bailey farm and the Pure Oil Co. is due at No. 3 on the William Epply farm. In Harrison Township, Muskingum County, the Carter Oil Co. has rigs completed for second tests on the R. H. Findlay and J. R. Dutor farms.

To Drill to Trenton Rock

On the Granville Pike in Lot 5, Burlington Township, Licking County, the Edward H. Everett Co. has started a test on the John Patton farm, with the Trenton Rock as the objective, the first to be drilled to the Trenton Rock in that locality. In Newton Township, Jones, Reece & Co. have 6-bbl. pumpers in the Berea grit at Nos. 2 and 3 on the James McKinney farm.

In Liberty Township, Section 7, Washington County, W. S. Lauffer & Co. completed a second test on the C. M. Howell farm. It is a small gasser in the Squaw sand at a total depth of 1,470 feet. In Section 20, Lawrence Township, the First National Bank of Marietta has a very light pumper in the second Cow Run sand at No. 3 on the Bergan Oil Co.'s lease. In Salem Township, Louis Bay & Co. have a duster at a test on the Jacob Morganstein farm. In Jackson Township, George Hess & Sons had the same kind of luck at No. 10 on the M. Rubrake farm.

West Virginia

A duster and a light gasser was the offering in the West Virginia fields. Both are in Grant district, Ritchie County, the dry hole is Mahoney & Lucas' test on the E. Pifer farm. Nothing was found in the Big Injun or upper sands. The small gasser is Pipe & Co.'s test on the B. Fox farm. It is on Little Painter Creek and is a small gas well in the Big Injun sand.

In Spencer district, Roane County, the Carter Oil Co. is building a rig for a test on the Craig heirs' farm. In Court House district, Lewis County, the Hope Natural Gas Co. has the rig completed for a test on the H. M. Ward farm. In the same district, the same company is due in the Gordon sand at a test on the G. L. Snyder farm. In Grant district, Ritchie County, J. E. Hardbarger has started to drill a test on his own farm.

Shooting Helps

In McElroy district, Tyler County, the Hope Construction & Refining Co. gave its No. 9 on the V. Olive Ellifritt farm, completed last week, a shot in the Maxon sand and it responded with a production of 80 bbls. the ensuing 24 hours. The Rock Run Oil & Gas Co.'s No. 3 on the J. Hooker Fleming farm in Lafayette district, Pleasants County, is good for 5 bbls. a day in the Maxon sand. In Clay district, Ritchie County, the Stephens Oil Co. completed a test on the Roscoe McCullough farm. It is a dark oil producer good for 2 bbls. a day. In Grant district, Pleasants County, the second test completed by B. Trippen on the H. T. Racer farm is dry in the first Cow Run sand. Two miles west of Smithfield, Greene district, Wetzel County, the Hope Construction & Refining Co. has a small gasser in the Gordon sand at a test on the Isaac Smith farm. In Grant district, the Hope Natural Gas Co. has a gasser in the same formation at a test on the John Ingram farm. In Clay district, Schultz & Fahey completed on the Catholic Church lot a test in the Maxon sand. It is a gasser. In Church district, the Carnegie Natural Gas Co.'s second test on the Marion Anderson farm is a gasser in the Big Injun sand.

Harrison County Developments

In Ten-Mile district, Harrison County, the Clarksburg Light & Heat Co.'s test on the T. S. Morris farm is a gasser in the Maxon sand. In the same district, G. T. Arnet started to drill a test on the Albert Lanhan farm. In Union district, the Vesper Oil Co. is fishing at 2,025 feet on the A. R. Lewis farm. In Grant district, the Hope Natural Gas Co. started to drill on the D. L. Nutter farm. In Sardis district, J. W. Arnett abandoned his test on the R. J. Talkington farm. In DeKalb district, Gilmer County, Benjamin Bell and others have a duster in the Big Injun sand on the Bowlinger heirs' farm. In Paw-Paw district, Marion County, the Hope Natural Gas Co.'s old gasser drilled down to the fifth sand on the Robert Davis farm is a fair gasser in the lower sand. On the Thompson-Davis farm in the same district, the same company has a gasser in the fifth sand. In Washington district, Calhoun County, the Euclid Oil Co.'s test on the L. E. Warner farm is a gasser in the Big Injun sand.

Light Producer in Cabell

On Fudges Creek, Grant district, Cabell County, the Aetna Oil & Gas Co. completed and shot in the Berea grit a test on the Frederick Carter farm and, contrary to the usual run of wells in this district, has a 2-bbl. pumper. On Charleys Creek in the same district, the same company has a gasser in the salt sand good for 2,000,000 feet, on the C. A. Nixon farm. On Indian Creek, Grant district, the Consolidated Oil & Gas Co. completed and shot in the Berea grit No. 3 on the Thomas H. Duty farm. It is a fair gasser. In Union district, Lincoln County, the Carter Oil Co.'s test on the M. J. Tully farm is a fair gasser in the Big Injun sand. In Carroll district, Baker Brothers are through the Berea grit at a test on the H. Baker heirs' farm and still waiting for a shot.

Completions in Southeast Ohio

In Section 3, Hopewell Township, Perry County, the Midland Oil Co. completed a test on the George Trout farm, a light gasser in the Clinton sand. In the northwest quarter of Section 26, Washington Township, Hocking County, the Carter Oil Co. completed and shot in the Berea grit a test on the Robert Stone farm. It is so light they are undecided on giving it a test. It is 1 mile west of the Gordon Oil Co.'s test on the William Stone farm. In Section 21, Jackson Township, Knox County, the Arkansas Fuel Oil Co.'s No. 1 on the L. V. Dufan farm is a light pumper in the Berea grit. In Newton Township, Licking County, Jones & Reece completed and shot in the Berea grit No. 4 on the James McKinney farm, a 3-bbl. pumper in the Berea grit.

Dusters in Licking County

In Lot 13, Madison Township, Licking County, W. W. and A. T. Wehrle have a duster in the Berea grit at No. 7 on the J. T. Watson farm. In Lot 12, Franklin Township, Bishop, Patton & Co. had the same luck at a test on the Martha J. Gutridge farm. In Newton Township, Rugg & Co. started to drill a second test on the Jacob Weiss farm. In Salem Township, Washington County, W. F. Meister & Co. have a very light pumper in the first Cow Run sand at a second test on the Theobold Daniels farm. In Section 14, Hanover Township, Licking County, the Carter Oil Co.'s second test on the Jacob Vandermark farm, drilled in two weeks ago, has been shot and they swabbed 95 bbls. the first and 50 the second 24 hours. It will be good for 40 or 50 bbls. a day. In Lot 16, Madison Township, Licking County, W. W. and A. T. Wehrle have a duster in the Berea grit at No. 4 on the A. D. Fetty farm. In Lot 21, Franklin Township, the same parties have a 3 or 4-bbl. pumper at No. 3 on the Leonard Smith farm. In Monroe Township, Muskingum County, the Leonard Oil & Gas Co. after drilling its test on the H. C. Baxter farm to a total depth of 3,530 feet have shut down. Neither oil or gas was discovered at this location.

Drilling and Starting Tests

In Smithfield district, Roane County, West Virginia, the United Fuel Gas Co. started to drill a test on the J. P. Young farm. In the same district, in the village of Newborn, the Morley Oil & Gas Co. is rigging up to drill on the public school lot. In Skin Creek district, Lewis County, the Pittsburgh & West Virginia Gas Co. started to drill on the Lyde Boggess farm. In Collins Settlement district, the White Oak Oil & Gas Co. is rigging up on the F. L. Bond farm. In West Union district, Doddridge County, the Columbia Carbon Co. started to drill on the Lewis Maxwell farm. In Glenville district, Gilmer County, the Star Oil & Gas Co. started to drill on the A. A. Post farm. In the same district, the Roanoke Oil & Gas Co. is down 1,135 feet on the E. A. Childers farm and fishing for a string of tools.

In Otter district, Braxton County, there is quite a little new work starting. In this district, the West Virginia Central Gas Co. started to drill another test on the A. P. Friend farm. In the same district, the Pittsburgh & West Virginia Gas Co. is drilling at 2,488 feet on the W. C. Hawkins farm. In Lee district, Calhoun County, Marion Crawley started to drill on the Joel W. Holbert farm. In Sherman district, the Hope Natural Gas Co. is drilling on the Cora Stump farm. In Ten-Mile district, Harrison County, C. T. Arnett & Co. started to drill on the Gilbert Lanhan farm. In Union district, the Reserve Gas Co. has the rig completed for its deep test on the Chapman farm. The rig is built of extra heavy material and thought to be able to withstand the strain to which they propose to drill. In the same district, the Vesper Oil Co. is due in the sand on the A. R. Lewis farm. In Carroll district, Lincoln County, Baker Brothers are through the Big Injun sand on the Hal Baker heirs' farm and waiting for a shot. In Union district, the Carter Oil Co. is drilling at 1,850 feet on the M. J. Tully farm. In Liberty district, Marshall County, the Manufacturers Light & Heat Co. has rigged on the William and Ellen Riter farm. The same company is drilling on the J. F. and Mary Reid and Andrew Howard heirs' farms.

In Court House district, Lewis County, the Federal Oil & Gas Co. is due in the Big Injun sand at a second test on the J. F. Rohrbaugh farm. In Coal district, Harrison County, the Camden Gas Co. is drilling at 2,520 feet on the Charles Heeter farm. In Clay district, Ritchie County, Lewis & Co. are down 800 feet and fishing for tools on the Rex Collins farm. In the same district, the Pittsburgh & West Virginia Gas Co. has rigged up to drill on the Dollie M. Freeland farm. In Union district, the Carnegie Natural Gas Co. has made a location on the A. G. Kelly farm. The Great Elk Oil Co. started to drill on the Baker-Baughman farm in Sheridan district, Calhoun County. The Carter Oil Co. is rigging up at a test on the Rebecca Williams farm in McClelland district, Doddridge County. In McElroy district, Tyler County, the Hope Natural Gas Co. has rig material at a location on the N. Booher farm. In Center district, Gilmer County, the same company is building a rig on the S. L. Collins farm. In DeKalb district, the Hope Co. is rigging up on the F. C. Gainer farm. In Center district, the same company is fishing for a string of tools on the Abraham Miller farm.

Southwest Pennsylvania

In North Strabane Township, Washington County, Pennsylvania, Tague, Lutton & Co. drilled a test on the Mansfield farm through the fourth sand to a total depth of 2,675 feet, a small gasser in the fourth sand. It was in this locality that the same parties completed a 40-bbl. producer two months ago on the R. G. Lutton farm. When this well was drilled into the fourth sand it was thought a new pool had been discovered. There are now several wells drilling in

(Continued on Page 80)

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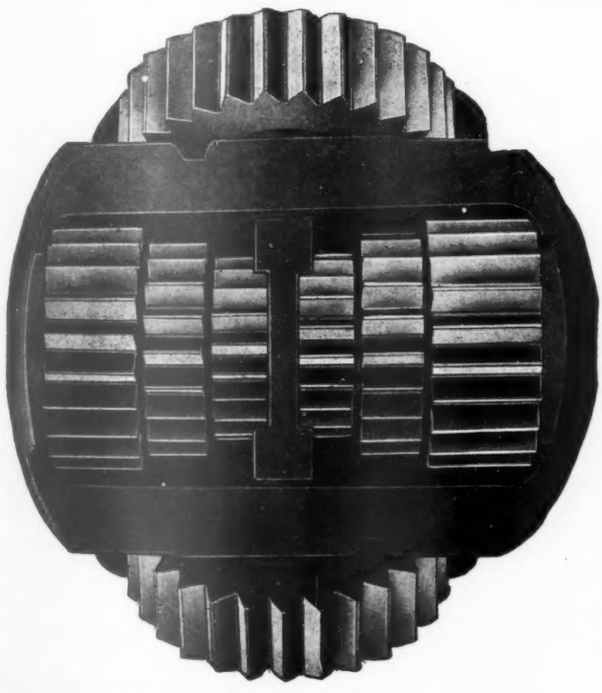

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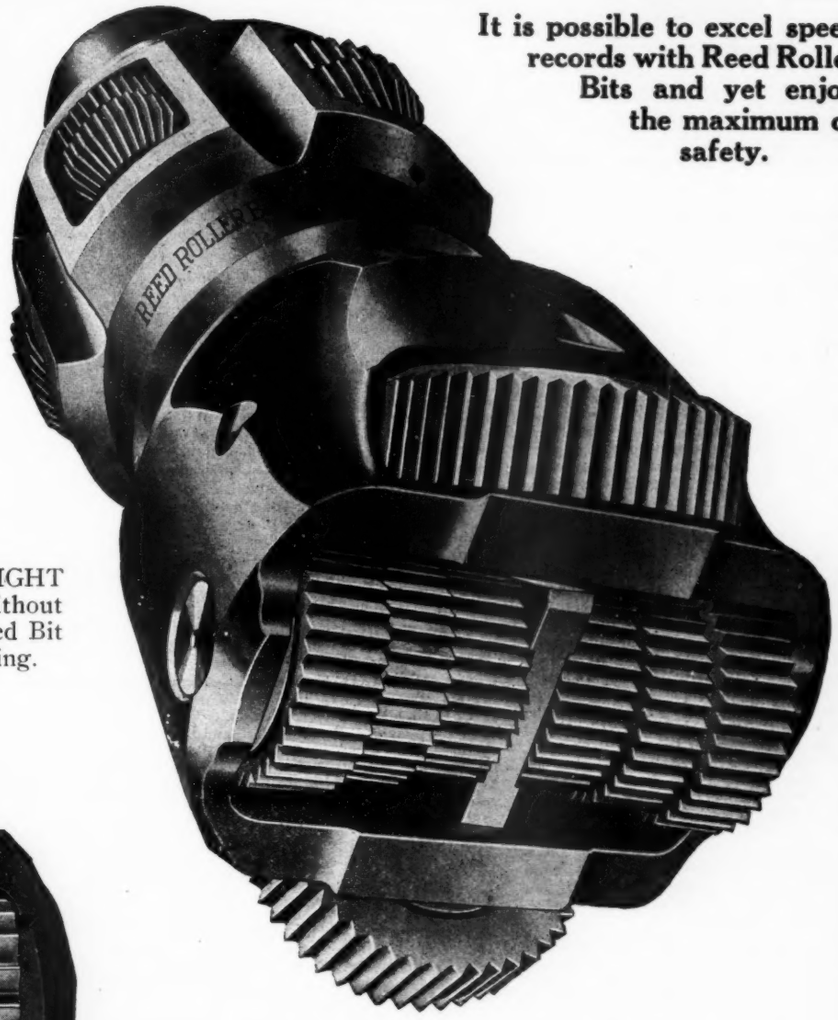

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Fields of the Central West

By Whit

E. E. White well, Auglaize County, Ohio, makes 100 bbls. in 18 hours. Coon Creek Oil Co. completion, Allendale Field, Wabash County, Illinois, makes 180 bbls., and J. W. Whiteside and others' wildcat there 200 bbls. natural. Ohio Oil Co. has 50 bbl.-producer near Cygnet tank farm, Wood County, Ohio.

FINDLAY, Ohio, Oct. 20.—The week's report from the old Lima Field shows a total of 26 completions of which 2 were dry holes and 3 were gas producers, the other 21 showing flush production of from 2 up to 100 bbls

The most important completion in the Lima Field of recent date was that of E. E. White on the southeast corner of the G. R. Julian farm, in the southeast quarter of Section 34, Moulton Township, Auglaize County, and almost 4 miles direct west of Wapakonetta. This well is in an area overlooked to a great extent when Auglaize County was enjoying its great drilling activity in the early days, being at that time looked upon as practically worthless for oil, being south some distance from production, and is really an extension to what is known as the Glynwood section of the county. When put on the pump this well put 100 bbls. in tankage in 18 hours and was then shut down for the lack of tankage, being outside of the pipe line limits, and opens up quite an extensive territory that may prove productive, if the well will hold up its production. In the northeast quarter of the same section and to the north of this well J. R. Kelley drilled in his second test on the G. Julian farm, 400 feet from the north line and 650 feet from the west line of the farm, that showed but 5 bbls. the first 24 hours. In the same township, Young & Geselchen's test on the southwest corner of the Alvin Myers farm, in the northwest quarter of Section 34, pumped 15 bbls., making seven new producing wells for that particular section and brings the production near Wapakenetta.

The second most important test for the Trenton Rock area was the Cockley Oil Co.'s No. 2 on the northeast corner of the Malissa Greentree farm, in McDonal Township, Hardin County, which showed 30 bbls. flush. These wells are reported to maintain their production better than any development in the Trenton Rock at this time. Top of sand was found at 1,441 feet and drilled 54 feet in to a total depth of 1,495 feet. With an increase in the price of crude, the Hardin County Field should show activity.

Paulding County Field

The latest completions from the Payne Field in western Paulding County are two producers and one dry hole. The test well drilled by H. B. Odenkirk of Wooster, Ohio, on the southeast corner of the J. A. Amspaugh farm, in the southeast quarter of Section 14, Harrison Township, was drilled to a total depth of 1,478 feet, and failing to find oil, the casing was pulled and the well abandoned. While there was a slight showing the owner was not satisfied to give the hole any further test.

In the same township, a short distance northeast of Payne, the Aetna Drilling Co. drilled in its second test in the southeast corner of the Thomas Lamb farm, in the northwest quarter of Section 34, and the well showed a flush of 30 bbls. of heavy grade oil.

In Benton Township, same county, to the west of Payne, in the present pool, the Washington Court House Oil Co.'s second test on the W. D. Ryle, in the southwest quarter of Section 4, 800 feet from the south line and 300 feet from the east line of the farm, is credited with a flush production the first 24 hours of 25 bbls. from a total depth of 1,448 feet.

Other Lima Wells

In Biglick Township, Hancock County, south of Findlay, King & Fletcher's test on the northeast corner of the Sarah J. King farm, in the southwest quarter of Section 27, proved to be a duster when drilled into the Trenton.

In Liberty Township, Hancock County, and practically within the corporate limits of Findlay, the Findlay Bible School's well No. 1 on the northeast corner of its own property, when drilled into the Trenton showed a rock pressure of 200 pounds and is a light gas producer, which is in Section 24. In Section 26, same township, Kirk & Bowers' No. 1 1,000 feet from the north line and 660 feet from the east line of the George Pifer land, proved to be a dry hole.

In Bath Township, Allen County, C. A. Peavey and others' No. 7 on the E. W. Prewant farm, Section 1, pumped 5 bbls. from between a depth of 1,316 and 1,348 feet. Carman, Botkins and others' No. 2 on the H. L. Solomon farm, Section 10, pumped 18 bbls. from a depth of 1,315 to 1,355 feet.

In Woodville Township, Sandusky County, the Ohio Oil Co.'s No. 19 on the G. Spayde farm, Section 32, pumped 5 bbls. Top of Trenton struck at 1,197 feet, drilled 23 feet in to a total depth of 1,220 feet.

In Clay Township, Ottawa County, R. M. Bell drilled No. 8 on the F. W. Redman farm, Section 21, to a total depth of 1,708 feet or close to 400 feet in the Trenton but found no deep pay, the well making a 5-bbl. pumper from the upper pay streak. Gust Magsig & Son's No. 3 on the W. E. Stewart farm, Section 14, same township, pumped 14 bbls. from a depth of 1,300 feet.

In Gibson Township, Mercer County, E. G. and James Henderson are starting No. 3 on the Jacob Schmitz farm, Section 36. No. 2 showed 15 bbls. from 1,136 feet, in the Trenton. In Hopewell Township, same county, the Home Baking Co.'s No. 3 on the George F. Hollsworth farm, Section 21, pumped 5 bbls.

Wood County Wells

Several sections of Wood, Hancock and Hardin counties were visited by auto on Sunday, and the greatest number of new completions were found in Wood County. The first two wells were in Lake Township. In Section 26, Keiser Brown and others' No. 6 on the northwest corner of the Edward Young farm, pumped 2 bbls. at 1,330 feet, while No. 7 600 feet from the south line and 1,200 feet from the east line of the same farm, pumped 15 bbls. at 1,316 feet.

In Plain Township, Barclay Perry's test on the southeast corner of the Harriett Green farm, Section 29, pumped 10 bbls. at 1,380 feet. Paragan Refining Co.'s No. 26 on the Pinert-Munn farm, Section 26, pumped 5 bbls. at 1,634 feet, and E. G. Rockwood's No. 11 on the southeast corner of his own farm, Section 33, pumped 2 bbls. at 1,330 feet.

In Section 4, Liberty Township, Hulse & Kuntz' test on the northeast corner of the D. W. Levers farm, pumped 10 bbls. at 1,363 feet, and W. S. Raydure's No. 1 on the northwest corner of the Marion S. Wiseley farm, same section, started on salt water, but had a fairly good showing of oil and should make a light pumper.

In Portage Township, the Ohio Oil Co.'s No. 74 on the northwest corner of the Joseph Trapnell farm, Section 30, pumped 5 bbls. at 1,460 feet.

In Bloom Township, the Ohio Oil Co.'s No. 48 on the northeast corner of the Northwestern Ohio Natural Gas Co.'s farm, Section 29, and close to the big Cygnet tank farm, came in as a surprise with a flush of 50 bbls. at 1,333 feet in depth.

In Perry Township, northwest of Fostoria, Dennis Brothers' No. 3 on the northwest corner of the C. J. Bressler farm, Section 6, is a light gas well.

Central Ohio

The most interesting development work now doing for oil in the Central Ohio Field is centered around Newark, in Licking and other townships of Licking County, where the Berea sand and Trenton Rock is attractive, more so the deep Trenton which is found at a depth of approximately 4,400 feet. Recent wells completed indicate their staying qualities, as the original well completed some few months ago, is still reported doing around 30 bbls. per day. The cost of this deep sand development is very expensive but as long as the wells are of the caliber of those already brought in, the trade is willing to take the chances. The latest completion to the deep sand made by the Pure Oil Co., on the Ilena Smith farm, when shot showed a production above 50 bbls. per day for three days and has all the earmarks of a 50-bbl. well. The Ohio Fuel Supply Co.'s deep Trenton test on the Fair Grounds at Newark is the next well to be completed, now being below 4,000 feet. In Hanover Township, same county, the strike made by M. F. Whitehill on the J. R. Simpson farm, Section 13, which by swabbing and flowing showed 100 bbls. in 24 hours, is also attracting much attention, and with an advance in the price of crude Licking County will see a large amount of deep test work.

Sixteen wells were reported completed in the Central Ohio Field for the week of which 7 were dry holes and 9 were gas producers. Four new locations for wells were made and 8 wells started spudding for the period.

Athens County

Athens County took the lead in completed work for the week with nine new wells. Some were more interesting as they were located in advance of production and open up territory for development work.

In Cannan Township, Athens County, Immel Brothers' wildcat on the Edward Halbert 121 acres, in Section 7, 900 feet from the west line and 275 feet from the south line of the farm, produced around 400,000 feet of gas, which was found in the second Cow Run, Stray and Salt sands. This opens up an entirely new area at practically shallow depths.

In Waterloo Township, same county, the Logan Gas Co. drilled in a light gas well at a test on the S. J. Lowery 144-acre farm, Section 1, the gas being found in the Berea sand at 1,105 feet.

In Troy Township, McBride and others' test on the Fritz Ahrendt's 97 acres, in Section 36, is reported to make a showing for better than 1,000,000 feet of gas from the Keener sand. In the same township, in Section 36, the Ohio Fuel Supply Co. found a dry hole at a test on the C. H. Ford 60 acres.

In Rome Township, the Pittsburgh Gas Co.'s test on the Thomas McGraw 127 acre farm, Section 23, is dry in the Maxon sand at 946 feet and will be abandoned. Harry W. Leeper and others' test on the J. C. Prent 25 acres, same section, has an estimated volume of 400,000 feet from a stray sand found at 890 feet. Stephens & Yowman's second test on the G. S. Parken farm, Section 35, was dry in the Big Injun sand at a depth of 1,000 feet and will be abandoned.

In Carthage Township, same county, the Logan Gas Co.'s second test on the J. W. Kincaid 132-acre farm, Section 8, struck a small volume of gas in the Big Injun sand, but the hole filled with water and will be plugged. Same company made a location for No. 3 on the M. Kinnon 127-acre farm, in fractional Section 31, 1,094 feet from the north line and 873 feet from the east line of the farm. The Ohio Fuel Supply Co.'s No. 1 on the Dana T. Burns 159 acres, Section 12, is a light gas well in the Keener sand. The Jay Oil & Gas Co. has started drilling its No. 4 on the J. E. Bailey 21 acres, Section 5, 300 feet from the west line and 985 feet from the west line of the farm. The Bradford Oil & Gas Co. is drilling No. 7, 300 feet from the east line and 1,025 feet from the south line of the Elanor Dunlavey 50 acres, in Section 5.

Other Counties

In Strongville Township, Cuyahoga County, near Cleveland, in the north end of the Central Ohio Field, the East Ohio Gas Co. drilled in a light gas well at a test on the C. W. Stelter 80 acres, Lot 98.

In Franklin Township, Jackson County, the Ohio Fuel Supply Co. has started drilling its test on the Matilda Mercer 102 acres, Section 13.

In Benton Township, Hocking County, the Ohio Fuel Gas Co. drilled a dry hole in a test on the Victor D. Barclay farm, Section 5. The Logan Gas Co. made a location for No. 6 well on the J. W. Mauk 120 acres, Section 13, same township, 650 feet from the north line of the farm, and 1,100 feet east of well No. 4 on the same farm.

In Cannan Township, Wayne County, the Logan Gas Co. drilled a fair gas well at a second test on the J. W. Scholl farm, Section 22. In Wayne Township, same county, the same company drilled a duster in No. 1 on the M. V. Caskey farm, Section 4. Same company has started drilling No. 1 on the Elmer Steiner 110 acres, Section 21, Milton Township, same county.

In Columbia Township, Lorain County, the Wiser Oil Co.'s test on the G. and J. Herald farm, Section 28, is estimated close to 600 000 feet of gas, and opens up what looks like a new gas pool. In Grafton Township, the Logan Gas Co. is drilling a second test on the Fred Klinect 84 acres, Lot 55.

In York Township, Medina County, the Logan Gas Co. hit a dry hole in a second test on the Gerge F. Gunkleman farm, Section 2, and started the drill at its No. 4 on the Medina County Infirmary 365 acres, Section 5, Lafayette Township, same county.

In Litchfield Township, Medina County, the Logan Gas Co. drilled a light gas well in No. 1 on the George E. Kennedy farm, Lot 56, and in Harrisville Township, made a location for No. 1 on the J. and E. Zimmerman 127 acres, Lot 90 and for No. 1 on the J. Wissler 29 acres, in Lot 90. In Litchfield Township, the East Ohio Gas Co. is drilling No. 1 on the Frank Burrer 66 acres, Lot 46.

Illinois

Seven completions were reported for the week from the Illinois fields, and some exceptionally large producers from the Allendale Field, in Wabash County. In this field J. W. Whiteside and others' No. 1, 600 feet from the north line and 360 feet from the east line of the H. W. Winter farm, in the southwest quarter of Section 24, Wabash Township, Wabash County, and practically a wildcat venture, showed a natural production of 200 bbls. Top of sand was found at 1,442 feet and drilled to a total depth of 1,478 feet. This well is about 2 miles south

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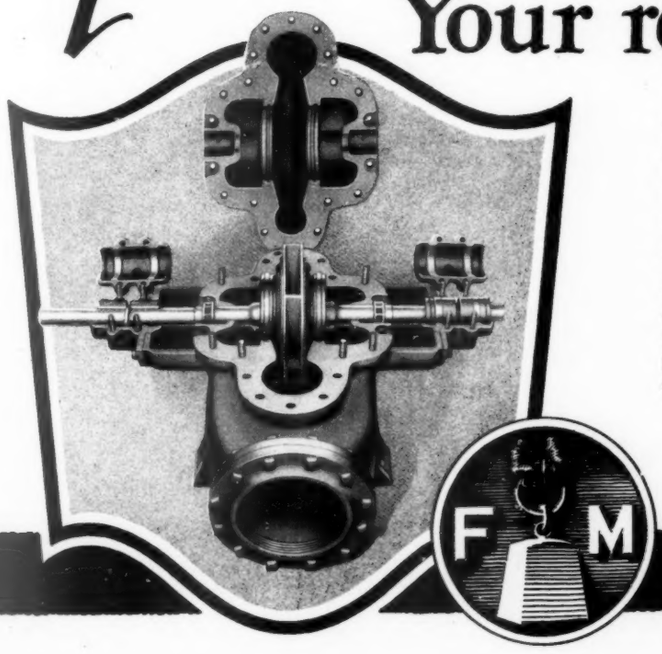

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BANKS-MORSE PUMPS

Smackover Field Has Big Possibilities

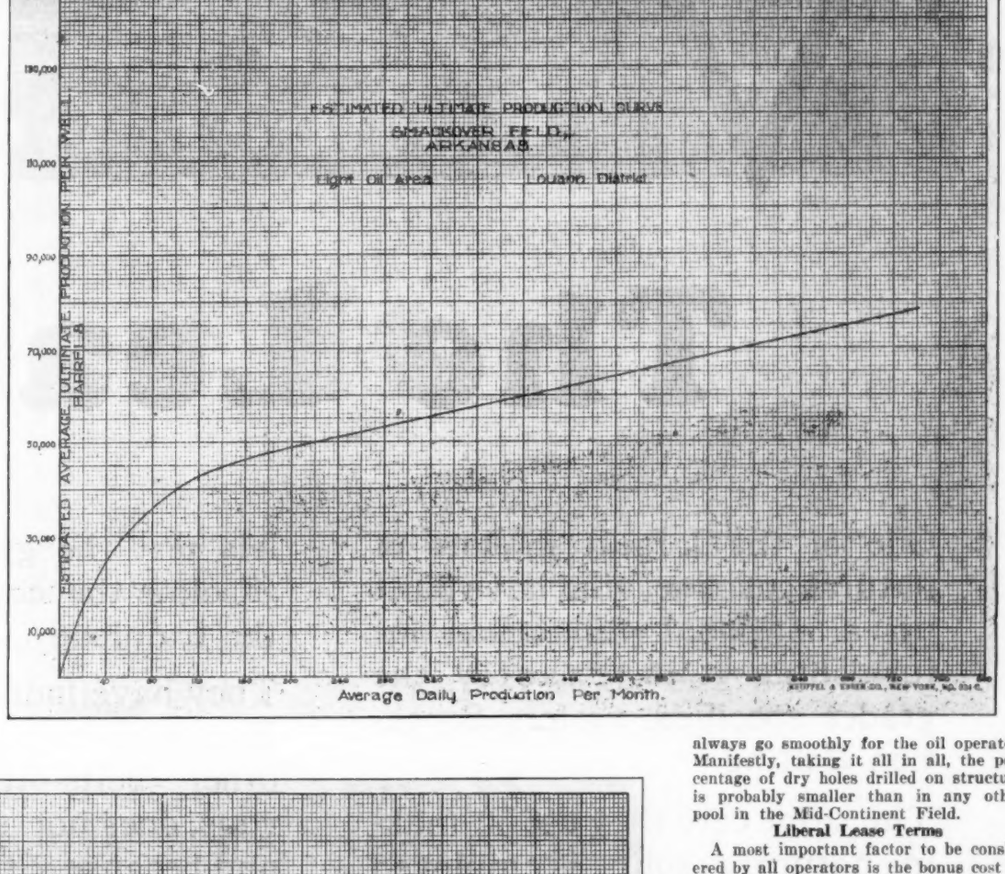
Passing of Promoter Who Paid Enormous Sums For Leases Has Aided Situation. Dry Holes Are Few and Costs Reasonable

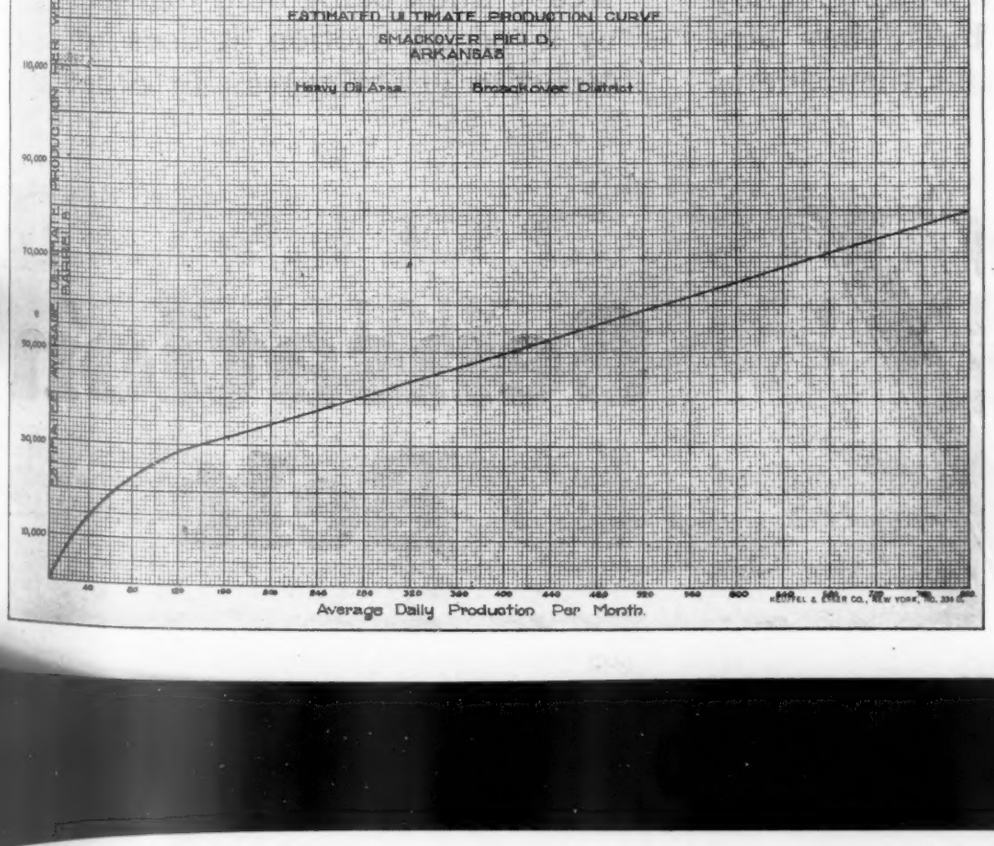
By W. M. Hauser
Consulting Engineer, Tulsa, Okla.

Oil operators not directly interested in the great Smackover Oil Field of Arkansas do not and cannot realize the enormous possibilities of this great pool. A few of the independent operators are just awakening to this fact. At the present time when the fields of Oklahoma and Texas have been holding their production down and curtailing drilling, the activity at Smackover is going on without any diminishing. There is practically no oil in earthen stroage left in the field. One going through the field finds only a little B. S. in the bottom of the pits. There seems to be very little oil in steel storage left either. Wells are pumping double speed, and the pipe lines are laying lines to wells with assured production before they are even swabbed out. There certainly does not seem to be an over production in this field.

Dry Holes Are Few

The drilling risk of getting a dry hole, if on structure, is comparatively small. This is a very important item to the small independent operator. He gambles so often where the odds are all against him, that a pool of the Smackover type is a veritable paradise for him. The sands are coarse and allow the oil to migrate freely. They are, too, more or less uniform throughout the field. Under such circumstances, every well drilled on structure is a potential producer. The several fault lines are distinctly defined and should, of course, be taken into consideration when drilling. A great number of wells now recorded as dry either came in with big production and were later lost through ignorance or were never drilled to the sand but were abandoned through drilling mismanagement. Most of these were wells drilled by inexperienced promoters who first infested this field. Then there were others lost due to hard luck. Things do not always go smoothly for the oil operator. Manifestly, taking it all in all, the percentage of dry holes drilled on structure is probably smaller than in any other pool in the Mid-Continent Field.





Liberal Lease Terms

A most important factor to be considered by all operators is the bonus cost of the lease. Leases in the Smackover Pool can now be obtained on structure for drilling contracts, oil bonuses to be paid out of the oil to be produced, and on other reasonable terms. The halcyon days of the promoters with millions of the public's money to spend for leases is gone. El Dorado was truly an Eldorado for them. As high as $8,000 per acre was paid for unproven leases when it was a well known fact that the best oil that might be recovered would be of 26 gravity Baume. The recent Federal indictments against these sensational promoters have practically eliminated them from the field. The elimination of the promoter in this highly advertised field has restored the sanity of the lease holders, lease sales have returned to normal, thus opening opportunity to the conservative investor again.

Reasonable Drilling Cost

Drilling costs are now within reason and a well can be drilled at Smackover as reasonably as in Oklahoma or northern Texas, provided it is the same relative depth. When contemplating costs numerous factors must be taken into consideration. Average costs must be estimate don average conditions. Weather conditions, accessibility, haul, materials, and labor make up the main items to be considered. There are certain periods of the year when it is impossible to drill without making enormous expenditures, the worst period being during the heavy rainy season which sets in during the

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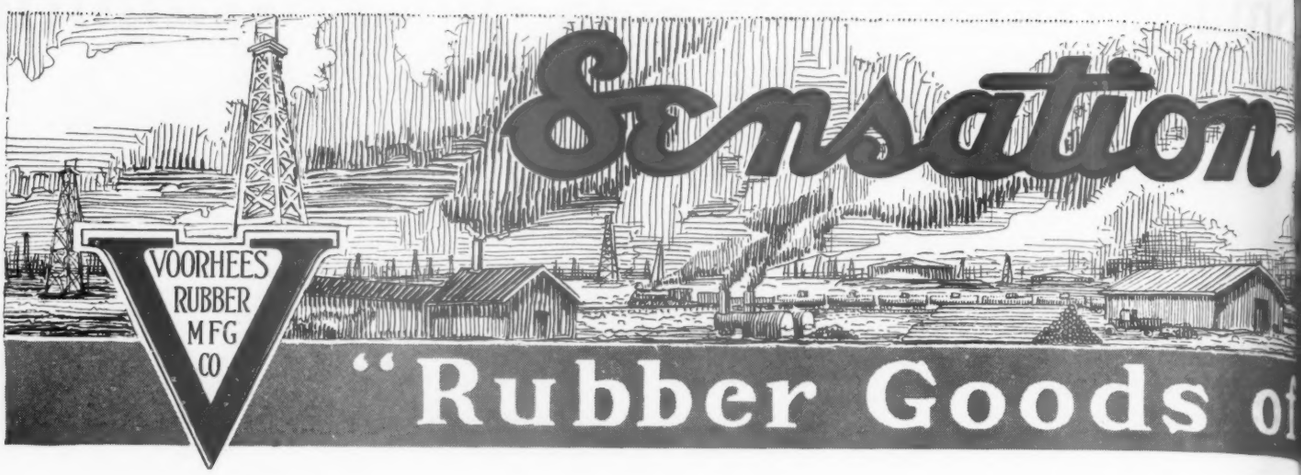

The Leaders

One of the largest makers of natural gasoline, who have built up a national reputation for furnishing it in exactly the grades specified, prefers Sensation Belting.

The same care they use in making natural gasoline is employed by them in buying belting. They "look into" the belt they buy almost as closely as their chemists test the grades of natural gasoline the company ships by the trainload.

They have found that Sensation Belt is different. It is not like other belts---it makes longer runs, does not stretch as much and because of the plys of special weave duck being held together by a special friction, it does not separate (Bootleg) as in other

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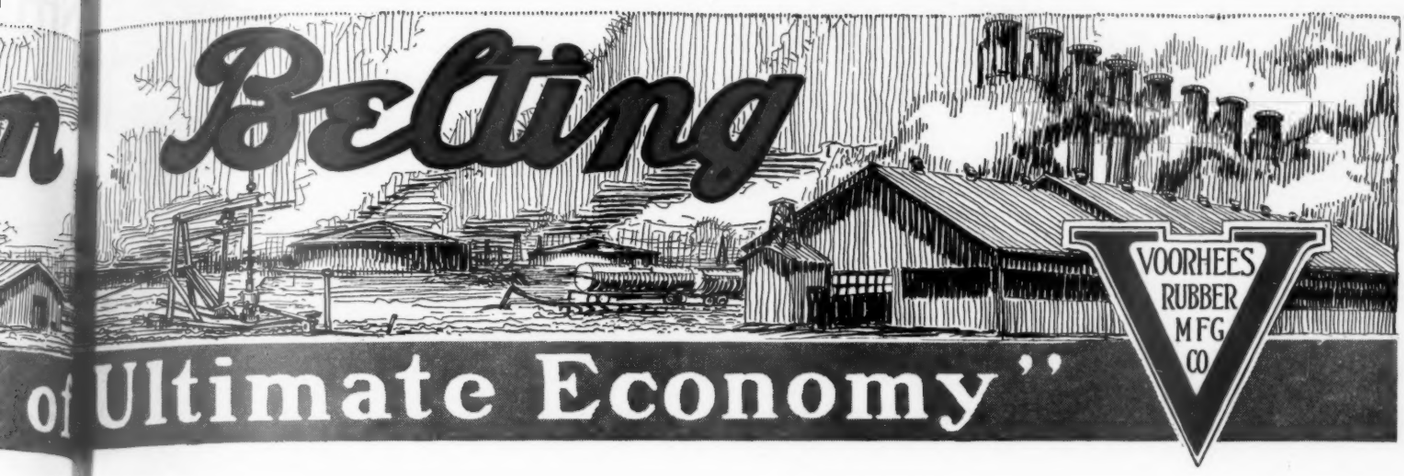


Prefer It

belts that are not built along the same lines as Sensation.

This same thoroughness (in "looking into" the belting which is equalled only by the thoroughness with which it is made) is leading other companies in the oil field to purchase Sensation Belt.

It is unlike any other belt. It outlasts two or three of the ordinary kind and, while the first cost is naturally higher, it is the "cheapest at the end"---the Belt of Ultimate Economy.

We recommend that you look into it. Let us send you samples---furnished by the Kansas City Office of the manufacturer or by the Bridgeport Branches.

THE BRIDGEPORT MACHINE COMPANY

General Offices & Works WICHITA, KANSAS

NATURAL GAS DEVELOPMENTS

BLACKWELL GAS FOR BRAMAN POOL FUEL

BLACKWELL, Okla., Oct. 18.—The companies operating in the Braman Pool will be using gas from the territory northwest of Blackwell in a few days for fuel to run the boilers at the tests being drilled in that area. The Duncan Pipe Line Co. is laying a 6-inch line from Section 8-27-1w, north to the Braman Pool. John E. Hosack is president of the Duncan Pipe Line Co. At the farthest west location in the area, the Una Lee Oil Co.'s No. 1 Johnson estate, in the northeast of the northeast of the northeast of 18-27-1w, is being drilled at 1,200 feet. The Marland Refining Co.'s No. 1 Blackwell Smelter in the northwest of the northwest of the northwest of 17-27-1w, is being abandoned at 3,750 feet. The Carter Oil Co.'s No. 1 Jameson, in the northeast of the northeast of the northeast of 17-27-1w, is being drilled to around 2,400 feet. The location is 1 mile east of the Una Lee Oil Co.'s No. 1 Johnson estate. Harris-Haun and others' No. 1 Brown, in the southwest of the sothwest of the southwest of 9-27-1w, is being drilled around 1,500 feet. The location is a quarter of a mile north of the Anolu Petroleum Corp.'s No. 1 School Land, in Section 16, the first big gas well completed in the Otstot Pool.

The Producers & Refiners Corp.'s No. 1 Muret in 13-27-1e, 8 miles east of Blackwell, is shut down on orders at 2,500 feet. The Vernon Oil & Gas Co.'s No. 2 Dickason, in the southwest of the southwest of the southeast of 17-29-1e, being drilled with a machine for gas, is being underreamed for the 10-inch casing. Total depth is 740 feet. This is a northeast diagonal offset to the Otstot development company's No. 1 Schimp, in the northeast of the northeast of the northwest of 20-29-1e, with 30,000,000 feet of gas production in a sand at 2,000 feet. No. 1 Schimp is 5½ miles east of the Comar Oil Co.'s No. 1 Duncan well in the northeast of the southwest of 21-29-1w, where 20,000,000 feet of gas was encountered at 1,800 feet.

The finding of 25,000,000 feet of gas by the Marland Refining Co., at 3,455 feet in its Summer County wildcat, in the northwest of the northwest of the southwest of 23-34-2e, has attracted wide interest among operators in northern Oklahoma and southern Kansas, and may cause an intensive drilling campaign in that territory. The location is 4 miles east and 5½ miles north of the Comar Oil Co.'s No. 1 Duncan well in the Braman Pool. The territory along the southern border of Sumner County from where the Wheelan Drilling Co. and the National Union Oil & Gas Co.'s No. 1 Chaney, in the southeast of the southwest of 16-35-1e, northeast of the Marland gas well, is regarded favorably by many.

BUYS GRADY COUNTY LEASE

CHICKASHA, Okla., Oct. 18.—Oklahoma Natural Gas Co. has purchased the lease covering the southwest of the southwest quarter of 28-5n-8w, Grady County, in the Chickasha gas field, from Hall, Briscoe & Nelson for a consideration of $32,000. There are two gas wells on the property, one of which is good for about 12,000,000 feet, and the other for 25,000,000 feet.

GETS 40,000,000-FOOT GASSER

BLACKWELL, Okla., Oct. 18.—The Harold Petroleum Co. has completed No. 1 Case, southeast of the southwest of 4-27-1w, in the Otstot Pool, 1 mile west, for 40,000,000 feet of gas at 3,434,3441 feet. The gas is very rich in gasoline content and when a drip is installed will produce about 450 gallons of gasoline a day.

CARBON BLACK PRODUCED FROM NATURAL GAS

By G. B. Richardson

The production of carbon black from natural gas in the United States in 1923 amounted to 138,262,648 pounds, an increase of 104 per cent over the production in 1922. The increase resulted from the expansion of the industry that followed the greater demand in 1922 for carbon black by rubber companies. The number of producers of carbon black reporting to the Survey increased from 26 in 1922 to 47 in 1923, and the number of plants operated from 43 to 69. The operations resulted in overproduction during the later part of 1923, as indicated by the quantity of stocks held in the hands of producers. Stocks increased from 2,434,547 pounds on January 1, 1923, to 38,320,814 pounds on December 31.

The production by States in 1923 as compared with that in 1922 is shown in the following table. Louisiana led all the States in the quantity of carbon black produced, as it has in the last three years, and its output of more than 101,000,000 pounds shows an increase of 142 per cent over its output in 1922. The production of Kentucky in 1923 increased 134 per cent. The production of West Virginia, on the other hand, declined slightly. Texas joined the States producing carbon black in 1923. The production of Wyoming, Oklahoma, Montana and Pennsylvania, which ranked in the order named, is grouped together to avoid revealing the operations of individual companies.

CARBON BLACK PRODUCED FROM NATURAL GAS IN UNITED STATES IN 1922-23

	Producers Report'g	Number of Plants	Quantity (lbs.)	Value at Plant—Total	Value at Plant—Average (cents)	Est. Quan. of Nat. Gas Used (M cu. ft.)	Average Yield per M cu. ft. (lbs.)
1922—							
Louisiana	14	18	41,966,856	$3,564,393	8.5	38,004,000	1.1
West Virginia	11	18	20,095,481	1,714,576	8.5	12,087,000	1.7
Kentucky	3	3	4,396,875	416,549	9.7	2,300,000	1.9
Oklahoma	1	1					
Wyoming	1	1	1,425,917	124,000	8.7	1,238,000	1.2
Montana	1	1					
Pennsylvania	1	1					
Total	*26	43	67,795,129	5,819,618	8.6	53,625,000	1.3
1923—							
Louisiana	29	35	101,398,881	8,415,566	8.3	82,974,000	1.2
West Virginia	11	20	20,038,415	1,983,385	9.9	13,722,000	1.5
Kentucky	6	6	10,058,887	758,091	7.5	5,906,000	1.7
Texas	3	3	2,633,013	183,306	7.0	2,136,000	1.2
Wyoming	2	2					
Oklahoma	1	1	4,133,452	351,718	8.5	4,358,000	.9
Montana	1	1					
Pennsylvania	1	1					
Total	*47	69	138,262,648	11,692,066	8.5	109,096,000	1.3

*In counting the total number of producers a producer operating in more than one State is counted only once.

SUMMARY OF STATISTICS OF CARBON BLACK FROM NATURAL GAS IN THE UNITED STATES, 1919-1923

	1919	1920	1921	1922	1923
Number of producers	17	19	23	26	47
Number of plants	36	35	41	43	69
Quantity produced (pounds):					
Louisiana	14,024,606	18,565,498	31,003,615	41,966,856	101,398,881
West Virginia	29,925,614	26,659,469	25,073,000	20,095,481	20,038,415
Other States	8,106,721	6,096,925	3,689,700	5,732,792	16,825,352
Total	52,056,941	51,321,892	59,766,315	67,795,129	138,262,648
Value at plants:					
Total (dollars)	3,816,040	4,032,286	5,445,878	5,819,618	11,692,066
Average per pound (cents)	7.3	7.9	9.1	8.6	8.5
Estimated quantity natural gas used, M cu. ft.	49,896,000	40,599,000	50,565,000	53,629,000	109,096,000
Average yield per M cubic foot, pounds	1.0	1.3	1.2	1.3	1.3

PENNSYLVANIA COURT REVERSES COMMISSION

PHILADELPHIA, Pa., Oct. 18.—The State Superior Court has reversed the ruling in the Public Service Commission in the case of L. W. Matthias, who petitioned for an extension of the lines of the Pennsylvania Gas Co., to certain outlying sections newly annexed to the City of Erie, Pa.

In its reversal, the court directed the commission "to take additional testimony as to the amount of gas used for industrial purposes during the winter, or peak load, months throughout the appellant company's field as well as the amount of gas used industrially by the company itself during such months; and to reconsider the matter and determine whether a discontinuance of such uses during the said months would afford such an additional supply of gas for domestic use as would justify the extension of the company's lines prayed for."

The court, emphasized the obligation of the company to furnish gas to annexed sections of Erie. It also pointed out that the public service has the right to make the company discontinue use of gas for industrial purposes to be turned over to domestic consumers provided a satisfactory substitute fuel can be found for the company's industrial interests.

"We are not satisfied that under existing laws the company or commission may discriminate as between domestic consumers and declare the use of gas for cooking or water heating to be superior to other forms of domestic heating. In case of general shortage the quantity reasonably to be used by domestic consumers may be limited.

"On the evidence now before us," the court's opinion added, "we are not impressed by the theory that a rigid enforcement by the company of its rules as to domestic use would affect a saving in gas which would warrant the extension sought. Such action, to have the desired effect, would place upon the company a burden of expense incommensurate with the results to be obtained.

MUNICIPAL GAS MAINS ARE SOLD BY TOLEDO

TOLEDO, Ohio, Oct. 20.—The final chapter in the city of Toledo's venture into another field of municipal ownership was written the past week. With the sale of the gas mains inside the city to the Toledo Edison Co., on a bid of $125,000, the venture, begun in 1889 and which at one time showed an inventory value of $1,225,899.22, was brought to an end.

The report of the sale of the mains within the city, which on March 31, 1899, were valued at $513,044.16, does not say what amount of mains were transferred to the new owners. In 1899, there were 93.24 miles of pipe of various sizes, but since that time much of the pipe has been removed to make way for better and larger pipe so that today there is no inventory whatever of what of the old plant lies under the ground.

In December, 1899, the Kerlin Brothers Co. purchased the pipes outside the city for $126,000 and offered $102,000 for the mains within the city. The latter offer was refused.

When the business was at its peak the city had a lease on 2,080 acres in the Findlay district with 46 producing wells. The supply then began to fail, and soon the wells were not producing enough gas to supply the several hundred customers who thought they would have an unfailing supply of municipally-produced gas at uniformly low prices. The Northwestern Ohio Natural Gas Co. was supplying Toledo's thousands of homes with natural gas at that time and is still furnishing to greater numbers of citizens.

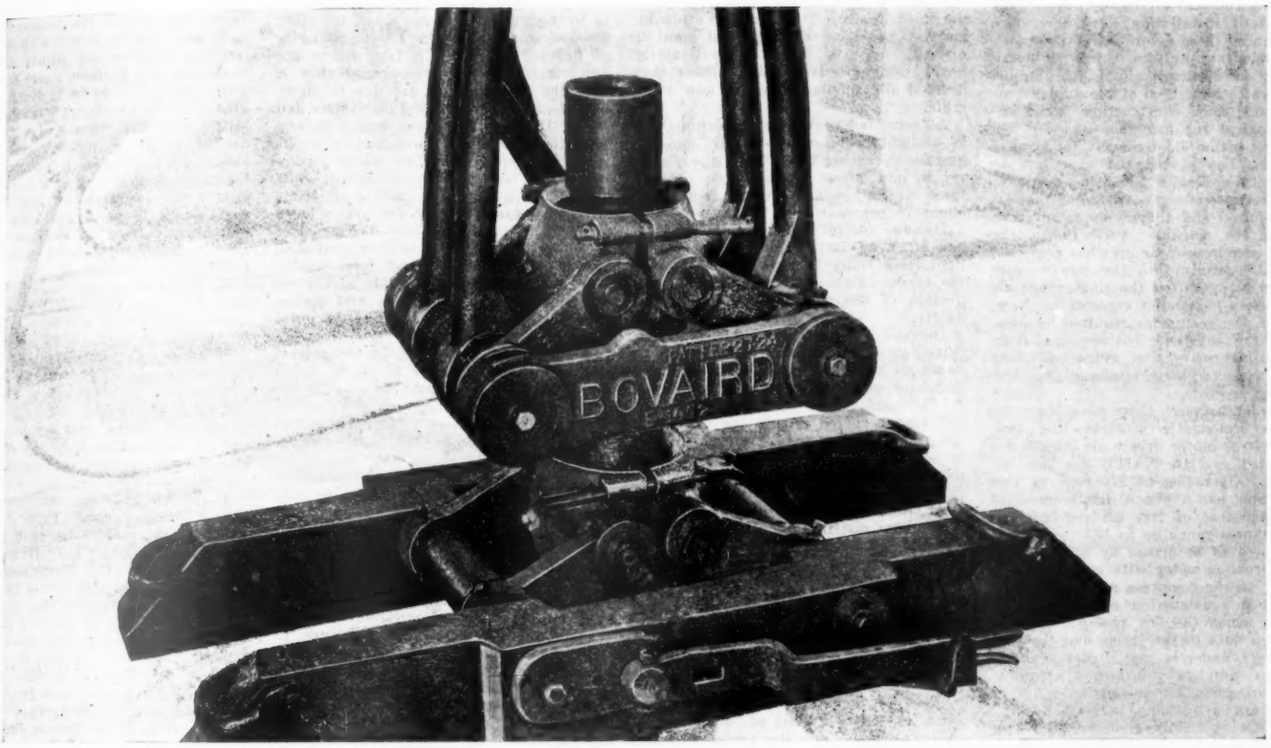
MAGNOLIA COMPLETES TEXAS-LOUISIANA LINE

HOUSTON, Tex., Oct. 18.—The Magnolia Gas Co., closely identified with the Magnolia Petroleum Co., has completed its 210 miles of 18-inch gas line from the northeast Texas gas district into Louisiana, crossing back into Texas south of Logansport, and thence to Beaumont. The line will furnish natural gas to the refinery of the Magnolia Petroleum Co. at Beaumont. Eventually it is expected to connect with other plants and then with domestic consumers.

It is the longest welded line in the State. It enters the Beaumont River from the east side of the Neches River. Several river crossing lines have been laid in a trench, dredged below the bottom of the stream to prevent the lines being damaged by anchors, as the river at Beaumont is navigable for ocean-going tankers, which dock at the refinery wharfs.

PART OF THE BRADFORD, PA., GROUP AT THE PETROLEUM EXPOSITION

Bovaird Grip
Casing Elevators and Spiders



An actual photograph showing them in use on Skelly Oil Co.'s lease near Bristow, Okla.

Assure the Utmost in Safety

They engage 98 per cent of the circumference of the casing and put no strain whatever on the couplings. It is impossible to drop casing on account of pulling off couplings.

The elevator or spider is constantly engaged as one will not release until the other has taken the load.

If you did not see our exhibit at the International Petroleum Exposition recently held in Tulsa, Okla., write us for information.

The Bovaird Supply Co.

Tulsa, Okla.

Stores:

Sapulpa, Okla.
Beggs, Okla.
Slick, Okla.
Lyman, Okla.
Okemah, Okla.
Bristow, Okla.
Stroud, Okla.
Independence, Kans.

EQUIPMENT AND SUPPLIES

LOWER POWER COSTS IN NEW COMPETITION

The low power consumption per cubic foot of air delivered and the favorable physical conditions of the air resulting from two-stage compression have long been recognized by compressed air users, but the initial cost of the compressor and the cost of installation have heretofore overbalanced these favorable features with the result that only machines of large capacity have been available, the majority of which have been of the duplex construction. Such construction, while entirely logical for machines of over 500 cubic feet piston displacement, for smaller capacities has proved too expensive to manufacture, besides being too costly to install because of the complicated foundation required and the nicety required in aligning the machine; furthermore, the average compressed air user has neglected to look carefully into the power costs involved in operating the single-stage air compressors of smaller capacities. Now, however, the economies required by present highly competitive business conditions make it necessary that every operating cost be reduced to the minimum, particularly power costs.

In order to meet these conditions the Chicago Pneumatic straight line two-stage belt or motor driven air compressor designated as class N-CTB has been developed. Operating at 275 r. p. m. this compressor has a piston displacement of 360 cubic feet of free air per minute; air pressures range up to 125 pounds. It is adapted to be driven by a belt or by a synchronous motor with rotor mounted directly on the compressor crankshaft.

Tandem construction is used in this unit in which the low pressure cylinder is placed next to the frame and the high pressure cylinder is connected to the low pressure cylinder by means of a tandem piece through which the piston rod stuffing boxes are easily accessible. The intercooler is rigidly mounted above the two cylinders in which location it is convenient for cleaning from either end. The whole unit is mounted upon a substantial subbase which gives the rigidity desirable in a machine of this class. Perfect alignment of the machine is assured, resulting in maintained high mechanical efficiency and consequently prolonged life. This feature also gives the unit a degree of portability not realized in duplex construction and for this reason it will appeal to those compressed air users who frequently employ semi-permanent installations.

The whole unit is said to be remarkable for its accessibility and ease of adjustment. The bearings are readily got at and adjusted with a minimum of exertion—especially the wedge adjusted connecting rod bearings which are described as so easily and conveniently adjusted that the operator is encouraged to keep them in perfect condition, thereby eliminating the most frequent cause of compressor failures.

CEMENT DEMONSTRATION ATTRACTED ATTENTION

Among the many demonstrations of material at the International Petroleum Exposition and Congress the results obtained from the use of Atlas Lumnite cement were among the most interesting. This cement is made particularly for use in oil well cementing, attaining a full 28-day strength in 24 hours, according to the makers. The Atlas Lumnite cement is a hydraulic cement. It is not quick setting, affording the usual time for mixing, transporting and pouring before stiffening, but after setting its high early strength is said to develop with great rapidity. Tests are reported to indicate that the compressive strength of Lumnite cement in 12 hours is 35 per cent greater than the average cement in 10 days.

DEMAND FOR OIL TUBULAR GOODS SHOWS SEASONAL FALLING OFF

By B. E. V. Luty

PITTSBURGH, Pa., Oct. 20. — The Riverside plant, Wheeling, W. Va., of the National Tube Co., has closed. This is the third in size of the company's plants, and being a relatively high cost plant it operates only in times of particularly heavy demand. Its closing means that demand for tubular goods is now moderate.

At some independent pipe plants there is a slight decrease in activity, and the average operating rate of the pipe industry is now about 65 per cent, the top level, in July and August, having been about 75 per cent.

Demand for oil country tubular goods has fallen off farther and is now rather light, this being in part a reflection of the season of the year and in part a reflection of the condition in the oil industry.

Demand for merchant pipe has continued good, consumption being about as heavy as could be expected. Buying of merchant pipe has been slightly heavier in the past couple weeks, or since the lull that occurred during the change in the price basing system. As such changes as occurred were in favor of buyers, and prices are now clearly established, there is no hesitation in buying, but at the same time jobbers are purchasing only for current distribution. They are maintaining well assorted stocks but have no disposition to increase stocks at this season of the year. The market now stands at 62 per cent basing discount, f.o.b. Pittsburgh district mills, 62 per cent f.o.b. Lorain, Ohio, Mill, and 60 per cent f.o.b. mills at Evanston and Indiana Harbor, Ind.

The official report of steel ingot production in September shows a tonnage equal to 62.4 per cent of estimated capacity, whereas all the trade estimates during the month were that the mills were operating at between 55 and 60 per cent. This is not the first time it has turned out that the steel industry operated at a higher rate than estimated. The discrepancy is due to mills being disposed to conceal the full rate at which they are running, lest they be suspected of price cutting. This is a highly competitive market and mills are watching each other very closely.

While pipe prices are clearly defined and the market seems to be entirely steady as to prices being maintained, that is by no means the case in some other finished steel products. In the majority of finished products, in fact, prices are quite irregular. The superficial view is that the irregularities are due to elimination of the Pittsburgh Plus system and the setting up of various basing points, but closer scrutiny shows that there is some cutting in lines in which basing areas have been plainly established, while there is also the point that some parts of the steel market are not yet reduced to definite basing systems. The chief difficulty is along the eastern seaboard, as the eastern mills have been unable thus far to hit upon suitable basing arrangements in bars, shapes and plates, and the price situation there is quite confused.

Bars, shapes and plates in the general Pittsburgh territory are $1 to $2 a ton lower than a week ago, present quotations, f.o.b. mill, Pittsburgh district, being: Bars, 2.00 cents to 2.10 cents; shapes, 1.90 cents to 2.00 cents; plates, 1.80 cents to 1.90 cents.

Steel buying in general has been lighter in the past week, but there may be only a little lull, there being no important change visible in general underlying conditions. It looks as if the steel industry would average about a 65 per cent operation this month and next, with the usual tapering off in December.

The Pan-American Petroleum Corp. has placed, for export, an order for 45 miles of 10-inch line pipe, representing about 5,000 tons.

The Champlin Oil Co. has contracted with the Chicago Bridge & Iron Works for four oil tanks for erection at Enid, Okla., involving about 1,200 tons of plates.

PURCHASING AGENTS HOLD PAINT SESSION

Paint salesmen and manufacturers were the guests of the Purchasing Agents Association of Tulsa at a meeting Tuesday evening, October 14. Following a buffet supper, G. A. Thompson, purchaser for the Empire Companies, Bartlesville, called upon the various paint men to explain the particular features of their products. Paints of every description applicable to practically every use in the oil field, pipe line, refinery and service station work, were described completely and many of the mysteries of manufacture were given frank expression.

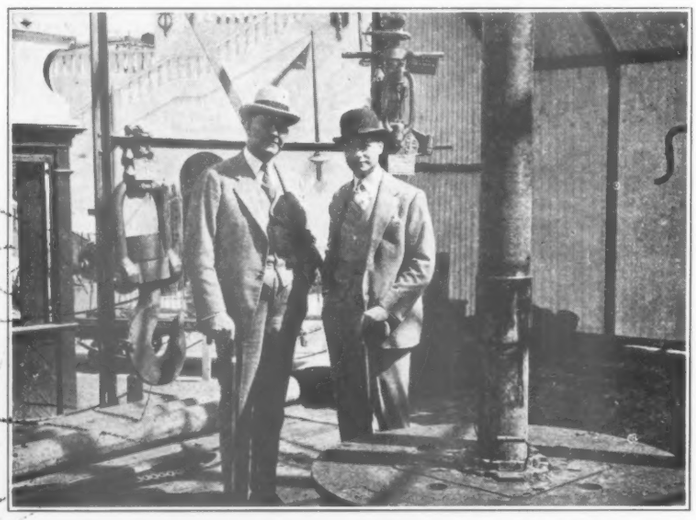
G. G. Langan, of Hill, Hubbell & Co., Tulsa, enumerated the outstanding features necessary for paints with high heat resisting qualities and paints applicable to steel or iron surfaces where severe climatic changes could be expected. R. L. Foster, of the Pittsburgh Plate Glass Co., Milwaukee, Wis., responded with a talk on the length of time a steel surface should weather before painting. It was the general opinion that the mill scale should not be rusted off, but that the surface should be scraped and brushed and then painted as soon as possible. Proper cleaning of the steel surface before painting was emphasized.

H. H. James, of the Sherwin-Williams Co., Tulsa, discussed priming coats, including vehicles as well as pigments. B. Murray of the Eagle Picher Lead Co., Chicago, discussed corrosion and rust and its relation to painting. A. H. Sabin, of the National Lead Co., New York City, one of the leading paint authorities in the United States, gave several interesting and informative ideas concerning the manufacture, use and application of various paints.

H. O. Wells, Tulsa representative of the Patterson-Sargent Paint Co., told about finishing coats for tank cars and steel storage tanks. J. D. Hanoy, of the True-Tagg Paint Co., Birmingham, Ala., discussed the probable life of paint affixed to a surface. The growth of mechanical means of applying paint and a discussion of sprays was conducted by Dillon T. Stevens, of the W. N. Matthews Corp., St. Louis, Mo. He contended that the spray was gradually but surely supplanting the brush.

A. C. Bean of the Tnemec Paint & Oil Co., Kansas City, Mo., discussed cement coverings and W. B. Killmer of Tulsa told of some plaints which had endured for scores of years.

AMERICAN OIL MEN AT ENGLISH SHOW



S. A. Guiberson and Paul Arbon, two well-known American oil field equipment manufacturers, on the derrick floor of the drilling well of Vickers, Ltd., at Wembley, England. This well was a part of the exhibit of rotary equipment made by Vickers at the recent British Empire Exhibition.

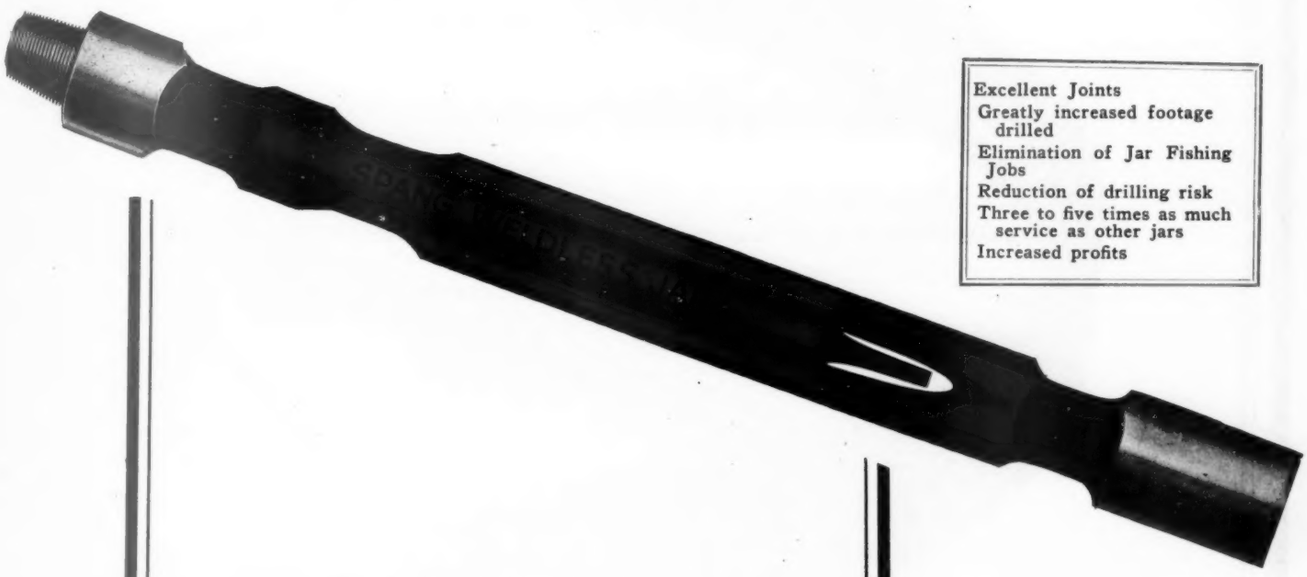
FILTERING SUBSTANCES IN LUB MANUFACTURE

One of the most interesting recent developments in refining practice was indicated by the display of Max B. Miller & Co., Inc., at the second International Petroleum Exposition and Congress. This company's displays included new filtering substances, particularly applicable for use in the manufacture of lubricants.

California clays used in the contact method were claimed by the manufacturer to show a greater unit efficiency for decolorizing lubricating stocks than clays from other sources, whether used in the percolating or contact methods. This latter method is accomplished by the use of extremely finely divided absorptive clays which are mixed with the oil which is to be decolorized. The mixture is then brought up to a comparatively high temperature to insure an intimate contact between the clay and the oil. The oil is then filter-pressed for removal of the clay. The quantity of the clay utilized controls the color to which the oil is brought.

These California clays used in the contact method are the products of the acid treatment of montmorillonite. The cost of treatment has been high. Palex clays made by the Max B. Miller & Co., Inc., it is said, can be furnished at a comparatively low price. The Palex No. 1 pulp and Palex No. 2, powder, are the two forms recommended. The pulp is advocated for residuum and steam refined stocks, while the powder is recommended for the overhead neutrals. The Palex clays are new products which have been used by the General Petroleum Corp. and Gulf Coast refineries.

SPANG
Weldless Drilling Jars



Excellent Joints
Greatly increased footage drilled
Elimination of Jar Fishing Jobs
Reduction of drilling risk
Three to five times as much service as other jars
Increased profits

Out in the Mid-Continent Field one operator, after using thirty-three sets, thought so highly of SPANG WELDLESS DRILLING JARS that he purchased fifty sets more on one order. Another in South America bought an order of twenty-five sets.

In California, in Texas, in Eastern Fields, in the Northwest—in fact wherever wells are drilled you will find SPANG WELDLESS JARS cutting down the cost of drilling.

The tough, strong construction, the endless care used in manufacture has resulted in a Weldless Drilling Jar that will out-wear and out-work any average jar of the welded type.

Send your order to your own Supply Dealer. He has SPANG WELDLESS JARS in stock.

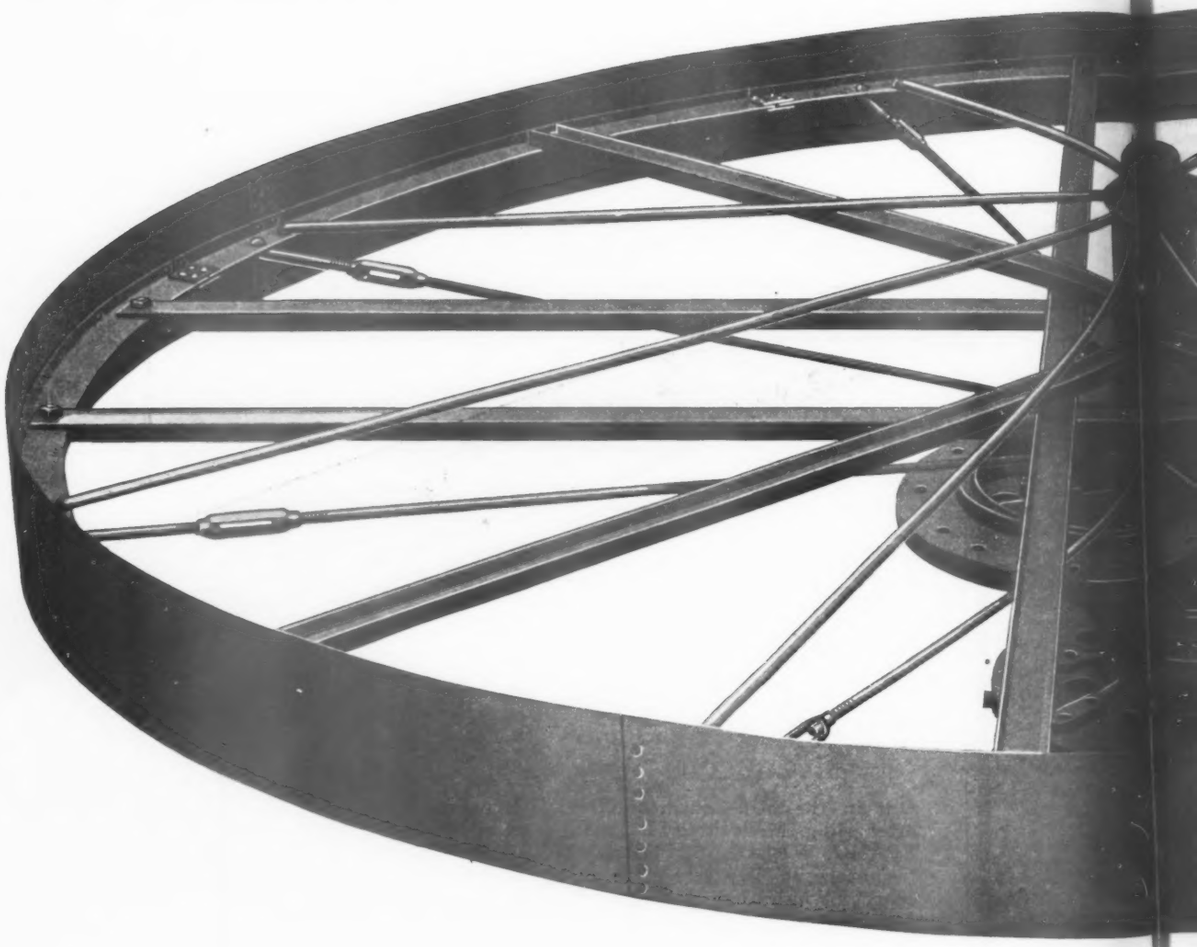
SPANG Thread Protector

Protect your Tool Joints with SPANG Thread Protectors. Like all Spang products they guarantee absolute satisfaction and long, durable service.

Spang and Company
Butler, Penna.

Sold by all Leading Supply Houses everywhere

No. 12C National

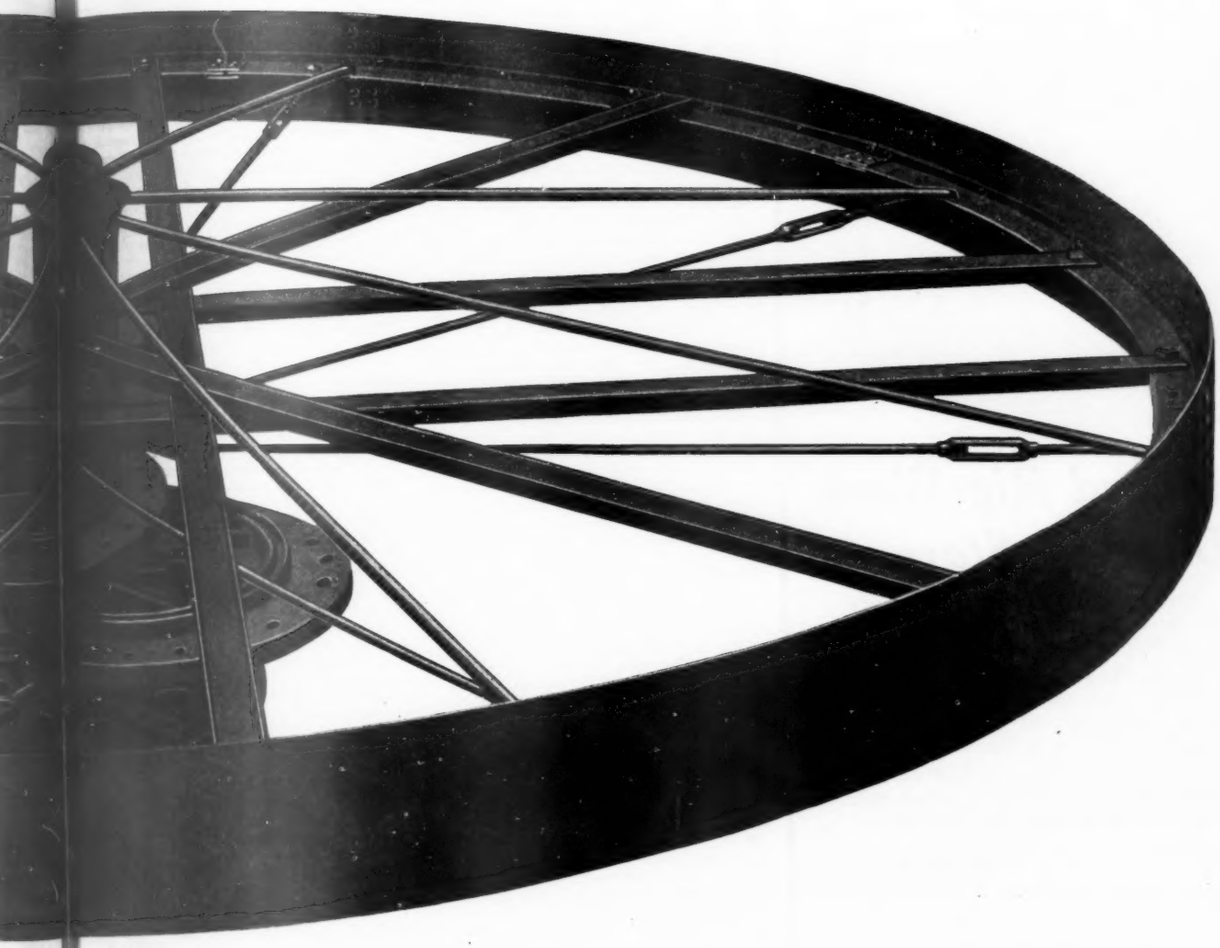


The Perfectly L

NSCO TRADE MARK

THE NATIONAL S

PUMPING POWER



Lubricated Power

SUPPLY COMPANIES

NSCO TRADE MARK

A Star Drilling Machine Operating In Oklahoma

Much Standard Rig Work Now Done by Stars

"Our No. 27 Star, 1918 make, is running as steady as a clock and doing the work of a big standard rig at 2,700 feet in a very hard formation.

"Twice recently we have had to fish out two entire strings of tools—sending down the third to get them out. The tools we are using are all heavy standard tools—one 10-foot solid Reamer weighing over a ton.

"Many standard rig men who have visited us and looked over our outfit were astonished at what this machine was doing in this hard lime and flint formation."

Signed B. A. ATKINSON,
Spring Creek and Luckey, Oklahoma.

More and more oil men are making the discovery that Star machines are practical and economical for the deeper drilling. They are finding that Stars can easily handle jobs they once thought required a standard rig.

Figuring the time and money saved, in moving and rigging up Star Portable Rigs must appeal to the practical driller from every standpoint. Derrick timber costs and rig builders' wages are entirely cut off.

THE STAR DRILLING MACHINE CO.,
AKRON, OHIO
Branches at Chanute, Kansas, Long Beach, Calif., Portland, Oregon.
Export Office—2 Rector Street, New York City.

OIL FIELD REGAINED CAREFULLY TREASURED

(Continued from Page 25)

in getting their practical experience by the proverbial American hospitality. I wish therefore to express to American oil men the deep appreciation of my friends and myself for their courtesies extended to French engineers, who always return to France enthusiastic about their treatment in the United States.

Producing 189 Years

The Pechelbronn Field is located in the heart of the prosperous and rich valley of the Rhine River, in the Department Du Bas Rhine, about 30 miles north of the City of Strasbourg.

The existence of bituminous deposits in eastern France has been known for many centuries. These occurrences are mentioned by a professor of the University of Strasbourg in a book published in 1498. Nevertheless it was not until the sixteenth century that a first practical survey was started and this was continued during a part of the seventeenth century. As a result a first lease was granted to the Count de Hanau in 1627, but it is only since 1735 that the Pechelbronn oil fields have been worked with method and without interruption. They have been producing 189 years. Approximately 1,200,000 metric tons or 8,400,000 bbls. of oil have been extracted. In 1768 the lease was bought by the family Le Bel, who after extensively developing the production sold its rights in 1889 to an Alsatian company. This company owned the fields 15 years and increased their production 75 per cent. In 1906 the deposits came into the hands of a German concern until the Armistice.

At that time, when the lost province of Alsace and Lorraine were returned to their mother country, France, the lease was sequestered by the French Government and bought in January, 1921, by a French concern, the Societe Anonyme d'Exploitations Minieres Pechelbronn, having a capital of 81,000,000 francs. This concern operates under the direct control of the Bureau of Mines. You probably know that due to the French mining legislation the owner of the ground is only owner of the surface and that the underground belongs to the State. Therefore, to have the right of operating a mineral deposit in France, a lease has to be obtained from the Government. The term of such a lease is 99 years.

The lease of the Pechelbronn Co., the only company producing and refining French crude in France, has an area of almost 100,000 acres. It extends on a north and south line of approximately 19 to 24 miles and an east and west line of about 10 miles. Over 3,000 people are at present employed by the company. The deposits are of lenticular form and are found in the oligocene. They occur a short distance east from the Rhenar fault at a depth ranging between 500 and 1,900 feet.

Methods at Pechelbronn

Petroleum is produced by two different methods. First by drilling, using the Racky system (percussion with mudladen injection) and recently the American cable tool method. Aproximately 600 pumping wells are operated. Around 165,000 feet were drilled during a year. The other method of production is that of mining by means of shafts and gallaries.

The process of mining for oil has been used successfully only in France by the Pechelbronn Co., which has developed a method formerly used in our fields by French miners during the nineteen century.

The successful result of our attempt to recover oil by mining depended chiefly on three main factors, all of which have been overcome satisfactorily, namely the certainty that crude oil in paying quantities would be found in the deposits already drained by pumping wells, the possibility of evacuating the gases and making the atmosphere safe for the miners, the question of cost of production.

The strata in the greater part of the area covered by mining operations in Pechelbronn are slightly folded and have a regular dip of five to seven degrees to the southeast. The strata have been subjected to faulting with an orientation usually parallel to that of the Vosges Mountains. The oil is in a series of sandy layers ranging in thickness from a few inches to a maximum of 9 to 13 feet.

Pumped, Then Mined

Before starting mining operations the deposit was thoroughly drained by wells. Two shafts of about 12 feet square were sunk and galleries of a special type were driven into the oil sand. The drainage galleries are driven as far as possible in the lowest part of the bed parallel with the foothill. The oil seeps from the walls of the gallery and is collected in a drainage channel and pumped to the surface.

All modern mining extraction methods are applied with the exception, of course, of explosives. The galleries are from 4½ to 6 feet large and 6 feet high. The extracted sand is evacuated by mining cars with animal traction.

The ventilating system and the special fire protection devices, after careful study, have been developed to a point which gives entire satisfaction. The men work on a 6-hour shift and never have to use masks. Portable electric lamps are used exclusively for the lighting. Compressed air is the only power allowed for extraction machinery and pumps.

The Pechelbronn Co. has now three mines actively at work and has started operations for the opening of a fourth. The depth of the deposits where this mining method has been applied ranges from 500 to 760 feet. Over 15 miles of galleries have been made.

Because of the very favorable conditions at Pechelbronn it has been found that by the appliance of mining methods to oil deposits twice as much oil on an average can be recovered as already produced by pumping wells.

The analysis of French crude, which is of paraffin and asphalt has a gravity of about 25.7 Be. is approximately as follows:

Gasoline 7-8 per cent vol.
Kerosene 25-27 per cent.
Gas oil 10-12 per cent.
Lubricating oils 40-42 per cent.
Paraffin wax 2.5-3 per cent.
Petroleum tar 10-12 per cent.

The Pechelbronn Co. operates a complete refinery having a capacity of approximately 2,000 bbls. a day and located at Pechelbronn-Merckwiller.

In comparison to the immense American deposits the figures given for Pechelbronn will seem very small and almost insignificant to you, but for France this field is an important factor as by this means she is not entirely dependen tupon foreign countries for her needs in petroleum products.

WILL AMERICA COME TO MINING FOR OIL?

(Continued from Page 25)

of explosives is impossible on account of the danger of firedamp. Gradually, however, under the action of the discharge of oil and gas, the sand has a tendency to crumble and lose its adhesion, requiring very careful timbering and lagging. This crumbling of the sand is another source of grave difficulty, and danger, requiring constant attention.

Compressed air is exclusively used as motive power. Davy lamps cannot be used; storage battery lamps with carefully protected bulbs are the only permitted lights.

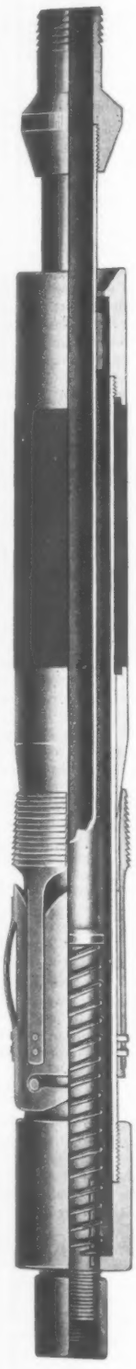
In 1922 a daily average of 1,200 bbls. of oil was produced (420,000 bbls. over the year).

The area so far developed by shaft No. 1 was formerly drained by four wells, which from 1908 to 1917 had yielded a total production of 21,000 tons, whilst the mine from March, 1917, to September, 1920, yielded 48,399 tons from this same area (or 2½ times as much), whilst it is by no means exhausted.

Wietze on Salt Dome

The oil field of Wietze, 40 kilometers northeast of Hanover, is also an old one.

Don't Throw Away Gas Pressure By Letting Your Well Flow Thru the Casing



Put Every Ounce of Gas Pressure to Work for You — Postpone the Time You Must Go on the Pump

A well flowing through the open casing is wasting gas pressure which, conserved, would be worth hundreds, probably thousands, of dollars to you.

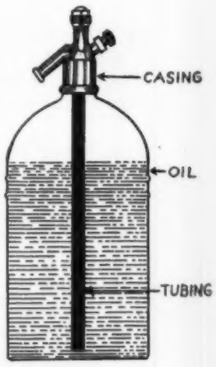
Such a well is like a siphon bottle with the glass tube removed. (See illustration at right.) This bottle has been filled with water into which gas has been forced under pressure. If the tube is removed and the trigger pressed, the sudden expansion of the released gas in the water causes a frothing overflow of liquid, as you have seen a beer bottle overflow when opened. Soon, however, all the gas has escaped —yet only a third or less of the liquid has been carried by it out of the bottle.

With the glass tube in place, however, the gas pressure is imprisoned until it has forced practically ALL of the liquid from the bottle. Only when the liquid has left the lower tube opening clear does any appreciable volume of gas escape.

A flowing well is exactly similar. The casing is the bottle neck, the tubing the glass tube, a GUIBERSON Control Head Packer the cork. Flowed through the casing, the gas quickly escapes, carrying only a small fraction of the oil. Flowed through the tubing, with its opening near the bottom of the sand, the gas is imprisoned until it has forced nearly ALL of the oil to the surface.

If its pressure fails before this has been fully accomplished, nevertheless ALL the pressure has been utilized. Also, this pressure has served to wear channels from all parts of the sand to the bore of the well, so that thereafter the sand will drain more easily.

The GUIBERSON Control Head Packer, patented, is the only packer which places your well fully under your control. It is the only completely scientific packer. Allow us to send you our booklet explaining its advantages and telling WHY it can be run even in flowing wells against heavy pressures, a feat which can be accomplished with no other packer.



THE GUIBERSON CORPORATION
Box 1106, Dallas, Texas
OKLAHOMA BRANCH: 402 W. First, St., Tulsa
CALIFORNIA BRANCH: 1737 E. Seventh St., Los Angeles
318 First National Bank Building
HOUSTON
506 Trust Building
NEWARK, OHIO

GUIBERSON

BETTER BE SAFE THAN SORRY

? Is Everything Running Smoothly At Your Oil Wells

There is one way you can avoid much of the trouble right from the start in pumping and in cleaning your wells—that is, by installing an engine that never loses control of the load—an engine that can be started slowly and speeded up just as smoothly as an electric motor—

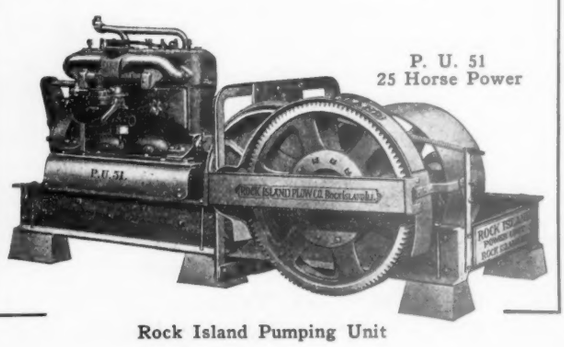
Rock Island Pumping Unit

The Rock Island Pumping Unit, model P U 51 is the engine just described. It is built especially for the work by practical oil men and is being used successfully in the great oil fields.

It is a 25 h. p. four cylinder engine which operates on either natural gas or gasoline. No clutch—no transmission gears required—friction transmission gives seven speeds forward and seven reverse without any clashing, jerking or grinding of gears. You can increase the speed smoothly as the load decreases.

If you have any "wildcat" wells or wells where the water is scarce, this engine can be equipped with a radiator for cooling, which saves the expense of installing tank or laying a pipe line.

Write us for free booklet describing the Rock Island Pumping Unit and get in touch with Mr. Camp at Tulsa. He will tell you where you can conveniently see one of these engines and also furnish other information of value to you.



Rock Island Pumping Unit

Manufactured by

ROCK ISLAND PLOW CO., Rock Island, Ill.

Sold by

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It is a salt dome field, irregular and much faulted. Oil was first mentioned here in 1670, when it was skimmed from tar seeps. Modern exploitation began in 1889; in 1897 there were some 80 wells yielding an average of 20 bbls. per well; around 1899 they went deeper and reached oil down to 600 feet. The largest wells had initial productions of 250 to 400 bbls. and flowed. There now exist around 1,500 old wells. The peak of production was reached in 1908; about 650,000 bbls. for the year. It then rapidly declined.

The oil is a very heavy crude, containing from none to only 1 per cent of gasoline, in the upper Miocene strata, up to 600 feet; a somewhat lighter oil is found below.

The life of the wells is very variable. Some produced for several years (one well 26 years), others ceased to produce after two or three weeks.

The Deutsche Erdol Co.'s first shaft started in 1917 and was sunk to a depth of 750 feet; the mine became productive in 1920. The presence of water filled loose sands necessitates the use of the freezing system in shaft sinking.

In September, 1923, they were reported to produce 170 bbls. daily, in November, 1903, 240 bbls. Another report mentions 200 bbls. daily for the present year 1924.

Down to 750 feet they have four oil sands of which two are opened on 660 feet and 750 feet levels.

According to recent reports, drainage by tunnels has also been attempted in Russia, since 1923, at Schabury (in the Baku district).

Gasses Chief Peril

The main difficulty in oil mining is the danger from inflammable grease and vapors. This is very much more serious than in the worst coal mines known. The reason is that oil gasses are much more dangerous than the "fire damp" of coal mines. The atmosphere in the latter is made inflammable exclusively by methane, whilst the gasses discharged from oil sands contain many heavier hydrocarbons, including gasoline vapors. These oil gasses are much more explosive, and also more easily ignited than a mixture of air and methane. This latter mixture takes quite a time before it is heated up to its inflammable point; in a coal mine, filled with an explosive methane gas mixture, a short flash will not ignite it. They can use even special safety explosives, the flame of which is dampened by an admixture of chemicals evolving steam at the moment of explosion; the breaking of an electric light bulb, or the spark from a steel tool or a horseshoe striking rock, will not cause ignition. All this, however, is fully sufficient to immediately ignite oil gasses.

The range of the explosive mixture also is very different. Methane gasses are only explosive within the range of 5-14 degrees of methane to the air. Oil gas mixtures become already explosive at 0.8 to 1.3 per cent of gas to the air, and for gasoline gasses this ends at 4.9 to 5.4 per cent, although, if much methane, and little gasoline is present, the mixture remains dangerous up to 14 per cent. The force of the explosion of oil gasses also is much greater, causing more destruction, whilst also in an oil mine a fire invariably will follow every explosion. These fires are very difficult to handle: shutting off ventilation, the general practice in coal mines, to smother a fire for lack of oxygen, invariably causes new explosions. Even flooding of the location of the fire with water, always a last resource in coal mines, will fail usually, because the burning oil floating up, will only spread the disaster to higher levels.

Pechelbronn Explosions

The story of two explosions and fires at Pechelbronn in the summer of 1919 may best illustrate these difficulties.

On August 11 a rail slipped and fell in Shaft No. 2, and struck sparks, which caused a small explosion and fire. The shaft was closed and ventilation suspended: 12 hours later a violent explosion followed, damaging shaft and hoist severely.

On August 8, in a drive from Shaft 1, a pick struck a concretion of pyrites in the oil sand, the sparks causing an explosion which fired the oil in the open flume. The sheet iron fire doors were immediately closed, isolating this division, and 5 feet of sand were packed against the doors. All ventilation was thus suspended, and they hoped to smother the fire. On August 17 a heavy explosion occurred all the same. The whole mine was then closed for several weeks, during which two wells were drilled from the surface to the affected workings, and 18,000 cubic meters of steam forced down for 24 hours. On September 12, almost a month later, they again started the ventilator and a disastrous explosion followed immediately on the access of air. The mine was closed for an entire year, until a second ventilation and exist shaft could be sunk. Steam was forced down again in the meantime. This finally extinguished the fire.

Bulbs and Tools Menace

Davy lamps, even with double wire screens, are no protection whatever in an oil mine, even electric bulbs are most dangerous: the short flash of the exposed incandescent filament, when a bulb breaks, which will not ignite coal mine gases, would immediately set off an oil gas mixture; so would any spark from a breaking electric wire. The only tolerably safe lamps are storage battery lamps, with heavily protected bulbs, but cumbersome and of very poor candle power, (1½).

Any spark from steel striking hard rock, sets off an explosive gas mixture, when present. Consequently, ventilation cannot suffice to merely reduce the gasses to 1 per cent, as the coal mines safety regulations require, but they should be kept under 1-5 per cent. The amount of air per man per minute of 2 to 4 cubic meters, as prescribed for coal mines, is entirely insufficient in an oil mine. At Pechelbronn they force 6 cubic meters per man per minute through the mines. The more rapidly the air moves, however, the more rapidly also the gasoline present in crude oil flumes or oil puddles evaporates, and the more dangerous the vapors produced become. In coal mines, the inflammable gases travel exclusively along the roof of the workings; in oil mines part of the gases will do the same, but the very dangerous gasoline vapors will sluggishly travel along the floor, consequently dead pockets will be dangerous, both in the roof and in the floor, and supposedly safe workings may yet have a heavy, dangerous gas layer on the floor.

In addition, most oil gasses become toxic at already ½ per cent; as this is below the danger point of explosion, however, it constitutes a safety warning, but it will scarcely show up the especially dangerous floor layer of gasoline vapors.

Causes Heavy Cost

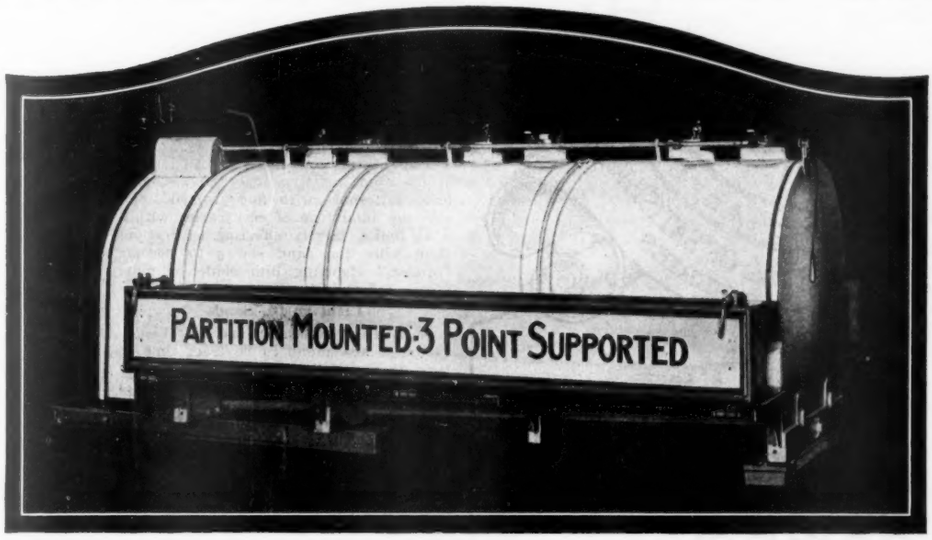
This grave danger is a source of heavy expenditure. Poor lighting impairs efficiency; explosives cannot be used; timbering must be chiefly of iron, at least near the working faces, wherever seepages of oil still occurs, and elsewhere requires tight board or sheet iron lagging. Ventilation must be very prolific and expensive. Even with these precautions explosions and fires will from time to time occur, and will require long and costly shutdowns. The goaf must be filled tightly, preferably with sand tailings, as it would certainly cause very dangerous gas pockets.

These experiences only apply to mines with very heavy crude, with almost no gasoline. What will be found to happen in light crude mines in Pennsylvania or Oklahoma? They certainly will be worse.

Another cause of danger is the strange behavior of the oil sand in these mines. We know that at least these very poorly consolidated sands of Tertiary age disintegrate rapidly, after exposure to the air and seeping their oil and gas. The sands worked at present are thin, not much thicker than a good coal seam. In many, notably our American deposits, we find sands 20, 30 up to 100 feet in thickness and over. How such sands can ever be mined, and the workings supported, is still a grave problem.

Sand Loses Coherence

Once a sand loses its coherence, it becomes a terrible load on the timbering, requires very expensive construction and



The Advance Design

of Columbian Partition Mounted, 3-point Supported Truck Tanks is based on eight (8) issued patents:

March 12, 1918 May 25, 1920 Aug. 31, 1920 July 17, 1923
Sept. 23, 1919 May 25, 1920 Apr. 5, 1921 Aug. 28, 1923
Other Patent Applications Pending

This is merely an indication of the initiative and creative ability of the Columbian engineering staff.

Here is illustrated the truck tank of tomorrow. It is equipped with internal safety valves, automatically controlled. Control system is of the selective type, opening any one valve selected, or of the master type, opening all valves simultaneously. Control head is located in bucket box. The closing of the bucket box door automatically closes all internal valves. Fusible link closes them in the fire emergency. May also be tripped from driver's seat.

Fire regulations become more stringent every day. Columbian has met all regulations where called upon for a test. We believe we have produced an absolutely fire-proof truck tank.

These other exclusive features easily identify the Columbian and account for its wonderful performance—time has never yet measured its full life—no Columbian has ever yet worn out:

Partition Mounted Heavy wood sills and cross cradles (deadload) are eliminated. You can haul more live load without increasing the gross load on the truck. This lessens the cost per gallon per mile of hauling.

3-point Supported Front end of tank is carried on a single pivot point. This frees the tank and the truck of twisting strains. It lengthens the life of both tank and chassis—eliminates repairs. It makes the tank ride the truck like a swan rides the water.

Jointless Pipelines One piece welded pipe lines without threaded joints or right angle bends. Component units of the tank—not just screwed on attachments. Funnel outlets from compartments and pipe lines sloped toward the rear empty tanks 25% faster. Drain every drop.

Removable Side Racks Panel side or pipe rail side carrying racks are adjustable up or down and removable. Load them to the guards in the emergency or strip for the speed trip.

Welded-on Bucket Box Bucket box is a welded on continuation of the tank body—not an attachment. Has removable bottom for easy access to faucets.

A Single Steel Unit The tank body, its mounting, its pipe lines and its bucket box are expertly welded into a single unit—virtually one piece of high grade copper bearing steel.

Dished Heads & Partitions Heads and partitions are much heavier than commonly used and are dished on special machines in our own plant—the strongest heads and partitions put in any truck tank, bar none. Double partitions if wanted—only single Columbian partitions are needed.

Standardized Sizes Overnight shipping service may be had on Columbian standardized sizes. Concentrated production on these brings you the lowest available prices on quality tanks into which 30 years of tank building experience is built.

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Bulk Station Tanks
Underground Tanks
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constant repairs; often solid masonry will be the only means of keeping the tunnels open. Possibly our harder Paleozoic sands would prove more resistant, however, the behavior of wells in many of our oil fields also indicates rather friable and loosely cemented sand rock. It is not at all necessary for wells to actually lift such sand with the oil, to indicate a poorly consolidated oil sand. At Pechelbronn old wells were reached in the workings, only showing a cavity not larger than a man's head at the bottom, although they had been flowing wells, pumped long afterwards.

As could be expected, the opening up of these actual oil sands by underground workings, has given us very valuable information as to conditions of saturation and variability of these deposits.

The saturation, as well as the texture of the sand, varies continuously. Coarse lenses alternate with fine grained sand, also the admixture of clay varies within wide limits, largely affecting saturation. Repeatedly the sand shows to become "broken," changing into shale or marl within a few feet.

Light on Oil Sands

Both at Pechelbronn and at Wietze, the sand was found to be from time to time traversed by thin fissures, which never extended beyond the oil sand into the floor or the caprock. These fissures scarcely ever were more than 1-5 of an inch wide, but when found filled with clay matter, they abruptly changed the saturation of the sand, apparently altogether blocking the migration of the oil.

It was a curious experience to find for how small a distance drainage extended from either tunnels or old wells, at least for the present stage of the deposit, after previous depletion by wells of most of the original gas pressure in the sand. New tunnels, reaching older ones, in which seepages had already enitrely ceased, found the yield of the sand affected only a few feet from the older tunnel. Similarly, on nearing old wells, which had bn producing for years, and were still pumping even then, the seepage in the working face of the approaching tunnel showed no diminution of yield until the well was almost touched, whilst the well itself actually continued its normal small production on the pump until almost actually tapped.

At this phase, seepage in all tunnels was confined to the lower 20-25 inches above the base of the sand. Probably the same thing occurs in old settled wells, and pumping wells therefore should be sunk to the very base of the sand, provided water conditions permit.

Increasing Saturation

At Pechelbronn the workings have touched the actual edgewater line of the oil field. As the inclines neared the edgewater, the seepage of oil became ever more prolific, the seeping zone above the floor became higher and finally covered sometimes the entire height of the tunnel face, until finally salt water made its appearance. Evidently the water, although not under appreciable pressure, and coming in only slowly, when tapped by the workings, was nevertheless pushing the oil before it and increasing saturation near the contact.

Away from the edgewater line, the top of the sand was quite dry, as far as seepage oil was considered; in the intermediate zone, above the saturated basal stratum, there occurred irregular alternating masses of saturated and dry sand, the latter making the impression of large irregular concretions.

Old wells which had tapped water below the sand, proved quite troublesome. It proved very difficult to shut off such water. A cement plug of 10 feet failed entirely, water came up all around it. Only a plug of 20 feet and a covering of 3 feet of cement over the entire floor of the tunnel surrounding this hole, finally shut off the water. (Weitze). When tapping several old wells, it was found that unpleasantly large quantities of fluid mud, never consolidated, were present between the casing and the wall of the hole. (Weitze).

Cost Varies Widely

It would seem unnecessary to go into details here concerning the cost of these oil mining operations. Evidently such costs vary within the widest limits from mine to mine, and relatively to the difficulties encountered. Also European, especially German conditions, can of course in no way be compared with such now prevailing in the United States. However, even now, it apparently pays to operate these mines both at Wietze and at Pechelbronn, as operations not only continue but are reported to be expanding.

Costs will no doubt be considerably greater here, whilst the oil is much lower in value. At present nobody, of course, would dream of opening oil mines here in the United States, but some day, I do not doubt, we will, and we will then have many graver problems on our hands to tax the ingenuity of our mining engineers. Anyhow, vast resources of crude oil may thus be produced, which we would scarcely be able to raise otherwise, at least so completely. It was lately reported in the papers that the well known mining firm of Guggenheim was seriously contemplating such oil mining operations in the Mid-Continent and had been looking into suitable land holdings for this purpose.

Russia to Compete With American Oil Under German Deal

When the diplomatic breach between Germany and Russia occurred on May 3 last, as a result of Berlin police entering quarters of the Russian commercial delegation in that city, several German oil-importing concerns, led by the Deutsche Erdoel Gesellschaft (headquarters in Berlin), were about to sign a treaty involving delivery by Russia to Germany of a considerable bulk of ptroleum products, chefly gasoline and lubricating oils. The amount of these products then mentioned approximated 40,000 tons of gasoline and 20,000 tons of other petroleum products, chiefly lubricants.

The breach of trade relations between the two countries, which has now been repaired, held up the execution of this treaty. About September 1, however, United States Trade Commissioner W. T. Daugherty at Berlin reports to the Department of Commerce the Russian commercial delegation in Berlin and the German interests involved—including it is understood, the Deutsche Erdoel Gesellschaft, the Deutsche Petroleum Aktien Gesellschaft, and Hamburg concerns such as Stern & Sonneborn, Schindler, and Albrecht—finally signed the treaty. It extends one year from September 1, 1924, to August 31, 1925, and, doubtless, is subject to renewal. The conclusion of this treaty, coupled with the rapproachment announced recently between the Stern & Sonneborn Co., of Hamburg, and the Royal Dutch-Shell, will doubtless affect imports of these products from the United States accordingly.

A quantity of 60,000 tons of petroleum products, if this estimate is correct, is equivalent to about 10 per cent of Germany's probable import of all petroleum products in 1924. In this connection it may be of interest to note that in the first six months of 1924 the United States furnished Germany with 207,833 tons of all petroleum products, or about 65 per cent of a total import of 319,300 tons. This was probably a record percentage of the market, although in 1913 the United States sold Germany 726,408 tons, or 58 per cent of a then total import of 1,282,256 tons.

The United States may expect keener competition from Russia on the German petroleum market. Production in Russia is recovering and exports are beginning to reach the world market after several years of virtual stoppage of the country's export machinery. Exactly how marked will be the effect of the Stern & Sonneborn-Royal Dutch agreement on American sales is not clear yet, although it is understood that American interests have sold petroleum products to the firm of Stern & Sonneborn.

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PARCO is a gasoline you can *bank* on.
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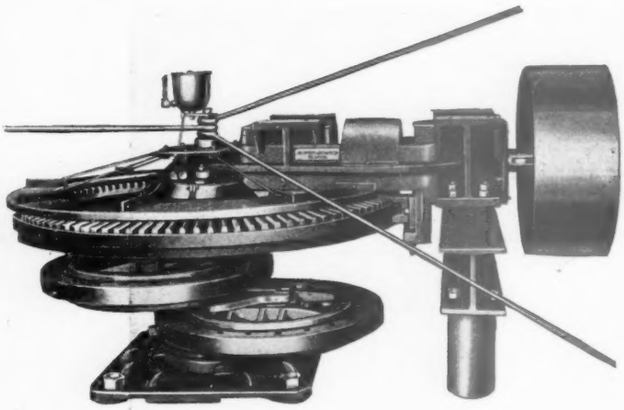

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The eccentrics are placed low, allowing the rod lines to come close to the ground, conforming to best oil country practice. The large power house and the long belt required for the band wheel power are not needed, two features which reduce the expense of installation and maintenance.

The Type PG Power may be had with either one or two eccentrics. The two eccentric power is shown above. The one eccentric power will be illustrated in a subsequent advertisement.

The eccentrics are driven from the main gear by means of a wedge locking device. The main gear is driven by a pinion, keyed to the drive shaft which has the belt pulley mounted on the outer end. The drive shaft is supported by a cast iron arm, the inner end of which is clamped to the center shaft and the outer end supported by a steel H beam. The drive shaft runs in two large bronze bushed bearings, amply lubricated by ring oilers.

The gear and eccentric hubs are bronze bushed. The bearing plate which supports the weight of the eccentrics and gear is also made of bronze. Dust covers are provided to exclude dirt and grit from between the bearing surfaces.

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EARLY OIL CONCESSIONS BASIS OF DEVELOPMENT IN VENEZUELA

By Charles E. Kern

WASHINGTON, D. C., Oct. 20.—Interest has been manifested in the early oil concessions granted by Venezuela as a basis of the story of oil development in that country. Following this line of thought Consul John O. Sanders began the preparation of a historical review of this subject last winter and recently his report has been received here. This review relates to the early concessions with a brief description of conditions attending the operations of these early companies.

Venezuela has two petroleum districts that are described by Mr. Sanders, one in the eastern and one in the western part of the republic.

"The eastern district has its center in the States of Sucre and Monogas; the western comprises the Maracaibo Lake Basin and the adjoining coast State of Falcon," he explains. "Large sums of money have been spent in the eastern section, but as yet oil has not been found there in commercial quantities. The importance of the petroleum industry in Venezuela comes from the results obtained in the western or Maracaibo district.

Oil Seep the Beginning

"The importance of the petroleum industry in the Maracaibo Basin is of very recent origin. But its beginning is not so recent. The first recorded concession for the development and exploitation of petroleum in Venezuela was granted to Antonio Pulido, a Venezuelan, in 1878. It comprised an oil seepage in the southwestern part of the Maracaibo Basin, within the bounds of the present State of Tachira. A little later it was upon this concession that the Compania Petroleo del Tachira was formed, a company which has produced crude oil and manufactured gasoline in a primitive way and on a very small scale continues even now, being credited in 1920 with having produced during its history a total of 151 metric tons of crude oil. Its importance, of course, outside of the immediate neighborhood, is purely historical."

The first really important concession was granted to Andreas Jorge Vigas, January 31, 1907. It covered a large portion of the southwest corner of the Maracaibo Basin, and is today the basis of the Colon Development Co., a British concern, controlled by the Dutch-Shell interests. It should be noted, however, that a one-fourth interest in the Colon Development Co. is owned by the Carib Syndicate, which represents American capital. The drilling of its first well was begun the latter part of 1914. During its history this company has drilled 7 wells, 4 of which, though shut in are said to be good wells. It operates a small distillery, or refining plant, for the purpose of producing gasoline.

La Rosa Gusher

The next recorded concession entering prominently into the history of oil development in Venezuela bears the date of February 28, 1907, and was in favor of Juan Antonio Aranguen. It comprises two large tracts of land, one on the west side of the lake, immediately west of the city of Maracaibo, and the other on the east side of the lake, somewhat farther south. Today this concession forms the basis of the Venezuelan Oil Concessions, Ltd., which on December 14, 1922, brought in the big gusher at La Rosa, said to have reached a maximum daily flow of 150,000 bbls. It is a British corporation and under control of the local management of the Dutch-Shell group. Drilling on this concession began in 1913, and still continues. To date, the company has drilled nine wells, the majority of which have been capped and are said to be capable of large production. Only that well which came in December 14, 1922, and ran wild for nine days before shutting itself in, has been allowed to produce commercially. From the oil saved from this flow, the company exported in 1923 a total of 54,631 metric tons.

The Arraiz Concession, on the north coast of the State of Zulia, was granted to Francisco Jimenez Arrais, July 2, 1907. It is being worked by the North Venezuela Petroleum Co., Ltd., a British corporation of the Anglo-Persian group. This company has drilled a number of wells and is still drilling. It has no producing wells but it is said to have one capped in that is capable of producing.

Supplies Curacao Refinery

The next important concession, known as the Bernabe Planas Concession, was sanctioned by the Venezuelan Government July 22, 1907. It comprised the Buchivacoa district of the State of Falcon. After having been on the market for a long time it was finally sold to British interests and is now the major basis of the British Controlled Oilfields, Ltd., a British concern, organized in January, 1918, registered in Montreal, Canada, but controlled from London, and said to be affiliated with the Anglo-Persian interests. Development of this concession began in the early part of 1914 and the company now owning it, the second producing company in the field, is credited with a total of 30 wells, 11 of which are now producing daily a total of about 250 metric tons of crude oil rated at 41 degrees Baume.

This company has a small refining plant which has been operated more or less regularly for a little over a year. Not much definite information has been given out regarding the purpose or future policy of this plant. It is believed, however, that it is operated primarily, at least for the present, for the purpose of reducing the company's crude oil to a point where it can be used for fuel. The resulting gasoline, the only refined product turned out, has found its way into the local market and some who have used it consider it superior to any other gasoline on the market. The company's crude oil is being delivered to the Dutch-Shell interests and shipped to its refinery at Curacao.

Promoted by Local Capital

A concession granted to Joaquin Briceno on January 16, 1909, comprising a small tract covering a seepage near Rio Pauji, in the district of Betijoque, State of Trujillo, became the basis of the corporation known as Compania Anonima Petroliferas de Minerales del Rio Pauji, one of the very few petroleum companies promoted by local capital. Its paid up capital was very limited, however, and its early promising development work had to be given up. The chief importance of this concession dates from 1920, when its further development was taken over by the New England Oil Co. interests, one of the early American companies to enter the Maracaibo Field, the activity of which belongs to the later period of the industry.

On July 14, 1910, Dr. Raf. Max Valladares obtained a concession comprising the municipality of Perdernales and adjacent Federal territory in the Amacuro Delta, the Peninsula of Paria and the district of Benitez in the State of Sucre. Lands selected from this concession form the basis of the Bermudez Co., an American corporation affiliated with the General Asphalt Co. of Philadelphia. Its holdings are in eastern Venezuela and its operations are understood to be chiefly confined to the exploitation of asphalt deposits.

The second concession obtained by Dr. Raf. Max Valladares bears the date of January 2, 1912. This was the largest concession that had ever been obtained up to that time. It covered about 13 States and Territories and embraced a total area of approximately 29,000,000 hectares or over 70,000,000 acres. It was a condition of this concession that the selection of lands for development must be made within a period of two years. A total of 1,028 locations of 500 hectares each were made, the remainder being allowed to revert to the Government. This prop-

(Continued on Page 111)

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May 23rd. "'Tex' Barrel was installed on May 14th in the hardest well we have in this district to handle, as it will make cut oil if you pump it the least bit too hard or if the Barrel and Valves are not in perfect shape. In case the 'Tex' proves successful in this well it will be a great help to us. It is giving real service so far.

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August 18. "We are still using the 'Tex' Barrel, and it is giving splendid results."

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CENTRAL WEST

(Continued from Page 56)

of Allendale, 3 miles east and close to 2 miles south of the initial well on the Della Wright farm, which started activity in the Allendale Field after an elapse of development work for a few years, and less than a mile northwest of the Wabash River, and about 6 miles or so northeast of Mount Carmel.

In the same township and field, the Coon Creek Oil Co.'s No. 3, in the southeast corner of the Alice R. Biehl farm, in the southwest quarter of Section 15 and about half way between the Winter & Wright wells, and known on the map as the C. E. Fox farm, makes the intervening territory between the two wells look very interesting to whoever owns the leases. This Biehl well showed a production after shot of 180 bbls. flush. Top of sand found at 1,465 feet and drilled to 1,482 feet.

One of the most interesting of the late wells in the Allendale Field, is that drilled by Wirebaugh and others on the southeast corner of the Clara Adams 60 acres, mapped as the J. R. Wright farm, in the northwest quarter of Section 23, and less than a half mile northwest of the Winter farm well. The essential part of this well is that it found its pay in the well known Bridgeport sand at a depth of from 1,074 to 1,084 feet and with a production of 20 bbls. This is the first Bridgeport sand found in that area, as this sand lies in the Bridgeport Field of Lawrence County and has been a heavy producer in that county.

In Section 14, Wabash Township, Gray and others drilled a dry hole in a test on the northwest corner of the Edward Wright farm, in the southwest quarter of Section 14, and about a mile south of Allendale.

The Allendale area got a hard knock when the well drilled by George Porter and others on the V. P. Compton farm, in the northeast quarter of Section 11, Wabash Township, 1,000 feet from the south line and 600 feet from the east line of the farm, and just north of the city limits of Allendale, came in a duster at a depth of 1,589 feet. Great stress was put upon this well for had it proved a commercial producer would brought about an extensive development.

Other Illinois Wells

In Martinsville Township, Clark County, the Ohio Oil Co.'s No. 14, located 1,000 feet from the north line and 200 feet from the east line of the Samuel N. Brosman farm, in the southeast quarter of Section 30, pumped 20 bbls. from the Stray sand at 1,425 feet, and the W. V. McBride, Inc., No. 3, 1,060 feet from the north line and 200 feet from the east line of the Nettie Baker farm, in the same section, pumped 60 bbls. flush at a depth of 1,427 feet.

In Parker Township, Clark County, Gillette and others' No. 2, 200 feet from the south line and 600 feet from the east line of the H. C. Echard farm, Section 34, was a dry hole at a depth of 1,465 feet. This well failed to find the shallower pay also.

In Bridgeport Township, Lawrence County, the Ohio Oil Co. abandoned old No. 11 on the Andrew J. Combs farm, Section 31.

Indiana

In Harrison Township, Knox County, in southwestern Indiana, Perry Andrews and others' No. 1, 200 feet from the south line and 600 feet from the west line of the Lulu Proctor farm, in the northwest quarter of Section 29, was a duster at a depth of 2,009 feet.

In Hamilton Township, Sullivan County, Mayfield and others' test, 1,120 feet from the south line and 200 feet from the east line of the R. Drake farm, in the northeast quarter of Section 30, was a duster at a depth of 818 feet.

SMACKOVER FIEI D HAS LARGE POSSIBILITIES

(Continued from Page 59)

winter. At the present time wells are costing from $10,000 to $15,000. This means that a good average cost to drill and equip a well in Smackover should be approximately $12,500, providing the average conditions and average luck exist. This again certainly puts costs within the reach of the small operator.

At the present time actual costs in the field for wells pumping on the beam run from $150 to $300 per month. Wells pumped from a central power should be operated as reasonably as in Oklahoma. So far the main expense has been caused by sand troubles. Experienced operators in the field, are slowly overcoming these difficulties. It should not be long before most sand troubles will be eliminated.

Life of Production

The life of production from the Nacatoch sand in the heavy gravity area has been estimated to be from 8 to 12 years. These estimates are the result of two to three years work of engineers who have made a close study of conditions as they exist in this field. In the Louann district, a light oil area, the estimated life, as calculated by petroleum engineers, is from five to seven years.

There are two distinct producing areas in the Smackover Field, divided by a fault line. The district immediately around Smackover is producing oil which average 20 degrees Baume. This is known as the heavy oil area. The light oil area around the town of Louann is producing an average 26 gravity Baume oil. The two accompanying curves will show the ultimate recoverable oil from any individual well when the average production for the first 30 days is known. One curve is for the light oil; the other for the heavy oil. Any one desiring to use the curves can find on the bottom line where the reading corresponds to the average production for the month, then follow the vertical line to its intersection with the curve, and read on the horizontal line running to the left the total estimated ultimate production from this well. These charts should be a help to the operator in making an estimate of what his wells will ultimately yield.

Two Pay Sand Horizons

At the present time there are two distinct producing horizons, the upper and lower Nacatoch sands. The upper sand is found at an approximate depth of 2,000 feet. The lower sand is found 200 feet lower. There is no doubt, though, that production may be expected from deeper sands. The initial production from some of the wells producing from the Nacatoch sand was as high as 30,000 bbls. per day. The deeper sands may not produce this high flush due to lack of gas pressure, but the lower sands can be expected to produce just as consistently, and may be longer lived. It has been a well established fact that the Louisiana pools, south of Smackover, have been consistent producers in the lower sands when production was found in the Nacatoch. The lower sand at Smackover have been estimated, the Blossom at an approximate depth of 2,700 feet and the Woodbine at 3,400 feet. It is generally understood that these sands have already been tested and found productive in Smackover. This being the case, producing wells will be pumping in this great wonder pool of Arkansas 20 years from now.

It well behooves the independent operator to give this Arkansas area due consideration. Keeping in mind the main items of vital interest. Namely, the risk is comparatively small; the cost of drilling and equiping wells is reasonable; and good wells with a long life are practically assured. A number of Tulsa operators are already producing oil in Smackover. It is understood that none of them are now losing money but that most of them have made money during the times losses have been registered in the rest of the Mid-Continent Field.

VISITING MOSUL FIELDS

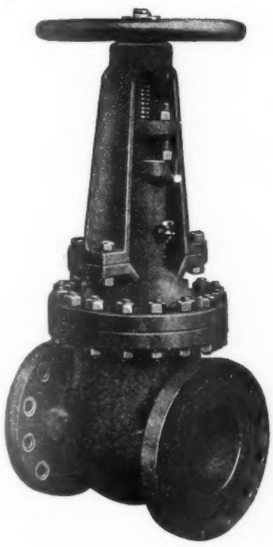
Sir Henry Dobbs, British High Commissioner, reached Bagdad by air from Cairo, the flight taking one day. Three members of parliament—Mr. Thomas Griffiths, Labor; Mr. A. T. Davies, Unionist, and Dr. J. H. Williams, Labor, have arrived by special overland motor-bus convoy from Beirut. They will study the oil question and will visit the Anglo-Persian oil fields.

CHAPMAN

—Study the Physical properties of

CHAPMAN CHROME NICKEL STEEL

At 1000° Fahr. before you specify your Steel Valves



A recently completed series of tests on Chapman Chrome Nickel Steel show the following results at 1000 degrees temperature:

Elastic Limit	51,000 lbs. per sq. in.
Tensile Strength	66,000 lbs. per sq. in.
Elongation in 2 in.	27%
Reduction Area	55%

Chapman Chrome Nickel Steel is an alloy steel, of great cleanliness and homogeneity. It is produced in an electric steel furnace, and under the supervision of the Metallurgical Department.

As production of sound, clean steel is the first requisite, the second of same importance is the proper and thorough annealing of the castings. Chapman Chrome Nickel Steel is annealed in an electric annealing furnace, free from contaminating gases, and controlled precisely by an automatic control, together with a potentiometer system.

It has been stated that when consumers acquire a full appreciation of what clean, sound electric furnace steel means in terms of national efficiency, safety and economy, we shall see a more rapid growth than has yet been seen. Its usefulness to engineering and industry has just begun.

All Chapman Chrome Nickel Steel is Produced by the Electric Furnace Process

THE CHAPMAN VALVE MFG. CO.
Indian Orchard, Mass., U. S. A.

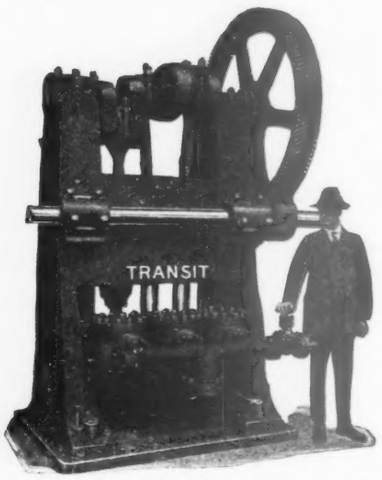
BRANCHES:

New York
Boston
Pittsburgh
Philadelphia
Detroit
Cleveland
Chicago
Los Angeles
San Francisco
Tulsa
Houston
Syracuse
Milwaukee

VALVES

Each P. A. Was O. K.

"What!" said the Purchasing agent, "you don't mean to tell me you are offering that vertical triplex as a Pipe Line Pump do you?"



6x18" Vertical Triplex Power Pump. 8000 barrels in 24 hours against 900 pounds line pressure. Floor space required 7 feet 7 inches, by 7 feet. 8-inch suction and 6-inch discharge.

"Don't waste your time showing me anything else than vertical triplexes," said another Purchasing Agent for one of the largest pipe lines in this country.

"Of course not," said we.

"We have found that Vertical Triplexes will do our work best and cheapest," continued the P. A.

We were able to satisfy both men—because we make both kinds of power pumps—Horizontal and Vertical.

Much depends on your conditions. We will be glad to go over them with you.

NATIONAL TRANSIT
Pump & Machine Company
Oil City, Pa.

District Offices: New York Philadelphia Pittsburgh Cleveland Tulsa Houston Denver

HEARING ON RED RIVER OIL CLAIMS BY SECRETARY WORK NOVEMBER 10

WASHINGTON, D. C., Oct. 20.—A hearing of widespread interest involving millions of dollars in permits and leases covering the south half of the Red River oil field in Oklahoma will begin on November 10 before Secretary Work of the Interior Department.

The hearing is expected to be the longest ever held in the history of the Department. In no other similar case have there been so many citizens in practically every part of the country financially interested in the final awards, the sole authority of which is invested in the Secretary of the Interior. This is due to the fact that many oil companies are claimants, with hundreds of stockholders.

There are 178 applicants for permits and leases, all of which represent claims filed on this south half of the Red River oil field before the Supreme Court of the United States declared that it was public land belonging to the Government. Many of these claimants had already drilled wells making it necessary for the Supreme Court to assume possession and operate them through a receivership, which was recently concluded. Through an Act of Congress the Secretary of the Interior was authorized to take over the proceeds of the receiver and then decide which applicants were equitably entitled to permits and leases by virtue of possession and expenditures on the land in good faith prior to February 25, 1920.

In order to give every applicant desiring to present oral arguments before Secretary Work an opportunity to do so, it was necessary to divide the claimants into groups and fix a date for each group to be heard.

The claimants, with the dates they are to appear follow:

November 10, 1924: Claimants for lands in the south half of Red River, which would be in Townships 4 and 5 south, Ranges 16 to 19w, inclusive, I. M., if the public land surveys in Oklahoma were extended southward.

November 12, 1924: Claimants for lands in the south half of Red River, east of what would be the western boundaries of Section 35, Township 4s, and Section 2, Township 5s, Range 14w, I. M., if the surveys were extended.

November 17, 1924: Claimants for lands in the Red River between what would be the eastern boundaries of Sections 9 and 16, Township 5s, Range 15w, and the range lines between Ranges 15 and 16w, I. M., if the surveys were extended.

November 24, 1924: Claimants for lands in the Red River, lying between what would be the range line between Ranges 14 and 15w, and the western boundary of Section 15, Township 5s, Range 15w, I. M., if the surveys were extended.

December 1, 1924: Claimants for those lands in the bed of Red River which would be between the eastern boundaries of Section 34, Township 4s, and Section 3, Township 5s, and the eastern boundary of Section 9, Township 5s, all in Range 14w, I. M., if the surveys were extended.

December 10, 1924, at 10 a. m.: Claimants for lands lying between what would be, if the public land surveys were extended, the eastern boundary of Section 8 and the western boundary of Section 7, Township 5s, Range 14w.

The hearings will last continuously beginning November 10 for a period of 30 days or more. Many claimants have already announced their intention of making oral presentation of their applications. Secretary Work has announced, however, that attendance at the hearing is not required and the failure of any of the 178 claimants to appear in person or by counsel will not prejudice their claims.

Hundreds of letters have been received at the Interior Department from every section of the United States from applicants and stockholders of companies that have filed applications for permits and leases. Since the south half of the Red River oil field was turned over to the Interior Department by the United States Supreme Court the oil wells already drilled have been operated by the Bureau of Mines.

Petrolia Oil Driller Home From Sarawak After Fourteen Years

CHATHAM, Ont., Oct. 18.—The return of Mr. and Mrs. Alf Webb from the Borneo fields was recently heralded by a letter from another of the drillers there, who writes in part:

Alf Webb, expert driller and all round oil man, leaves Miri, Sarawak, with Mrs. Webb and family for Petrolia on a well-earned holiday. They go via England and will take in the Empire Exhibition at Wembley. Like a good many men who have followed up the oil business in foreign fields, travelling has no terrors for Mr. Webb, as he has been to West Africa twice, and this trip home will be his second trip around the world, not of 25,000 miles but of about 32,000 miles. It is Mrs. Webb's and her two boys' first trip, as they came out by way of San Francisco, Japan, Hong Kong and Singapore, and will return by way of Singapore, Penang, Colombo, Aden, Suez, Port Said, Genoa and London and embark from Liverpool for Canada. Mrs. Webb's advice to girls who want to see the world is to marry a driller.

Alf Webb came to Miri some 14 years ago for the Anglo-Saxon Petroleum Co., now the Sarawak Oilfields, Ltd. Miri then, except for a small government station, was practically jungle. He has seen Miri and Pugut grow to be one of the largest oil fields in the East. He has held several good positions with the company, at one time having been in charge of Pugut, and at another production boss in Miri, but the call of the walking beam was too much for him and it is to his credit that he has struck more big wells and drew more in bonuses than any other driller in the company's employ.

Alf was born in Petrolia and with the exception of his foreign experience spent all his life there. He married a Petrolia girl about 27 years ago when he was just a working man. Now that he has made his pile he is still one of the boys who consider that the old town is good enough for them.

"Mr. and Mrs. Webb are noted for their hospitality to the 'single men' as those who leave their women at home are counted bachelors out here. We are all sorry to see them leave but they carry the best wishes of us all with them."

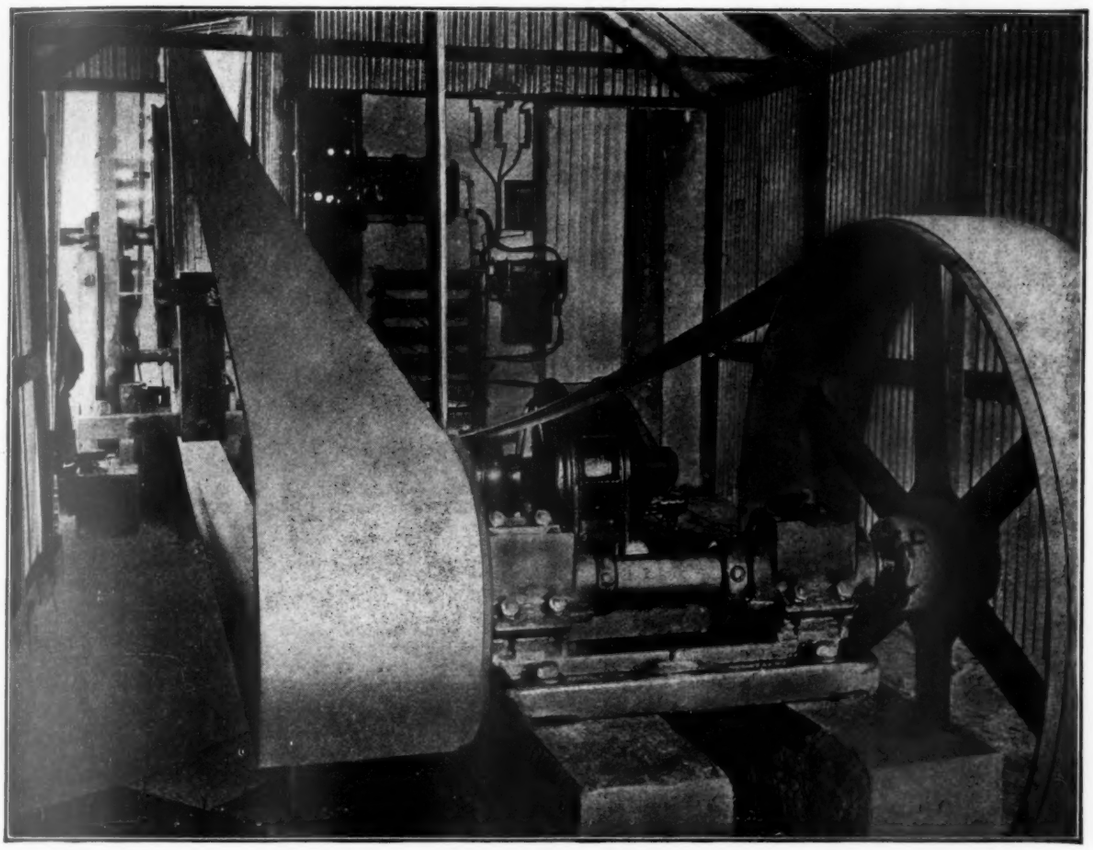
V.L.

GROWTH OF MOTOR BUS

WASHINGTON, D. C., Oct. 20.—The effort of the rapid growth of the motor-bus upon the revenues of the railroad carriers throughout the country was discussed at a meeting of general passenger agents in New York City on October 2 and 3. Since January 1 the railroads were reliably informed that upward of 1,500 new bus lines have started operation throughout the country and that during the same period 5,400 buses have been purchased at a cost of approximately $30,000,000.

TANKERS, LTD., REORGANIZED

A London report says Tankers, Ltd., is in the process of reorganization. Its fleet, over-valued at £4,051,700, is being written down to real value. According to agreement, Southern Oil & Transport Corp., a subsidiary, will not pay dividends until reorganized. It is estimated Tankers, Ltd., will get £500,000 from the sale of Lago Petroleum stock. Shareholders must sacrifice some part in the winding up of the company.



Its superiority a tangible and proven factor—

The records exist—investigate them.

"Commander" talks in the one language you understand—performance. Look over the field and you will find it everywhere proving its greater efficiency and economy.

Maximum gripping power—tremendous strength—flexibility; moisture-proof—shock-absorbing—lasting!

For every type of service, from the big drive where strength is all important to the exacting demands of small pulley work, where flexibility and ruggedness must combine.

Accurately fitted to *your* particular type of drive—three weights "Commander Extra Heavy", "Commander Heavy" and "Commander Light"—a high standard for each class of transmission service.

Goodrich half century of experience, Goodrich research and Goodrich achievement combine in solving your transmission problems.

ESTABLISHED 1870 THE B. F. GOODRICH RUBBER COMPANY *Akron, Ohio*

Goodrich

Commander

TRANSMISSION BELTS

THE B.F. GOODRICH CO. COMMANDER AKRON RUBBER WORKS AKRON · OHIO

One Devil's Steel Hand Two Underreamer Lug Fishing Jobs

Both Jobs Cleaned Up on First Run!

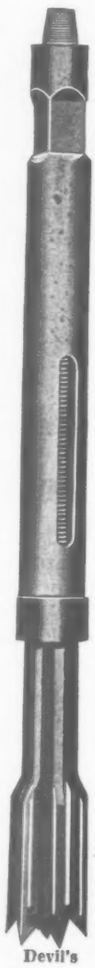
—another amazing record!

Devil's Steel Hand

On March 23, J. M. Hickey, of the Cactus Oil Co., drilling at Colorado, Texas, lost a lug off a 5 3-16" Swan Underreamer. This was the second job of underreaming in this hole for this size. Hickey had fished the other job out with a Devil's Steel Hand, so of course knew what to do in this case. He came into Breckenridge, got a Devil's Steel Hand and fished the lug out the first time he went into the hole.

Having a 3-day rental period, Hickey didn't bring the tool back until the 26th. Just as he got back to the Brown Welding & Machine Co. shop at Breckenridge, George Callahan of Albany, Texas, came in looking for a tool to fish the same-sized underreamer lug. He also got his lug the first time in the hole!

To clean up two underreamer lug fishing jobs in two oil fields in five days with but one run in each hole is a record that we are proud of even for the Devil's Steel Hand. You simply can't beat these tools for quick and successful fishing. Immediate shipments—write us for full details.



Devil's Pitchfork

BROWN

WELDING and MACHINE COMPANY

Main Office and Factory: Breckenridge, Texas
Rental Branch: 310 E. 3rd St., Tulsa

113

Petroleum Is Second Largest in Exports U. S. Chamber Finds

Petroleum and petroleum products make the second largest group in America's export trade, coming after the textiles, which for statistical purposes include raw cotton. This is brought out in a bulletin on the country's world trade, just published by the Foreign Commerce Department of the Chamber of Commerce of the United States.

"Petroleum exports comprised over 12 per cent of our total exports for the first half of this year," says the bulletin. "shipments abroad of the leading products totaling 8,396,000 tons of 2,000 pounds and having a value of over $229,000,000. compared with 6,825,000 tons, valued at $192,000,000 for the same half of 1923. The largest buyers included Great Britain. France, Canada, China, India, Italy, Belgium, Germany, Japan, Panama, Chile and Mexico.

"The principal petroleum export is gasoline, napthas, and other light products, which was our third leading export in value, being 4.3 per cent of the total exports. During the first six months of 1924 our exports amounted to 1,892,000 tons, valued at $87,843,000, against 1,296,000 tons, value of $74,856,000 for the corresponding half of 1923, an increase of 46 per cent in quantity and 17 per cent in value. The leading buyers were England, France and Canada.

"Exports of lubricating oil, our eighth export, amounted to 789,600 tons, valued at $48,518,000, for the first six months of this year, a 10 per cent gain in volume and a 17 per cent increase in value over the exports of the first half of 1923—716,200 tons, with a value of $41,314,000. European countries were the chief purchasers.

"We exported during the first half of 1924 1,487,000 tons of kerosene, valued at $44,049,000 as compared with 1,370,000 tons, value $40,086,000, during January-June, 1923—a 9 per cent gain in volume and a 10 per cent increase in value. China, England and India were our best customers.

"Gas and fuel oil exports, shipped largely to England, Panama, Canada, Chile, Mexico and Japan, increased 24 per cent in volume and 35 per cent in value, the exports for the January-June, 1924, period totaling 2,700,000 tons at $22,999,000, as compared with 2,184,000 tons, at $17,094,000 the year before.

"We also exported this year 1,399,000 tons of crude petroleum, with a value of $14,383,000. A 21 per cent increase in quantity and a 29 per cent gain in value over the exports of January-June, 1923, which totaled 1,157,000 tons, valued at $11,152,000. Crude petroleum exports were shipped chiefly to Canada, Cuba and Mexico.

"During the first half of 1924 our exports of paraffin wax amounted to 102,748 tons valued at $9,206,000, a 23 per cent increase in quantity and a 59 per cent gain in value over the 83,822 tons, value $5,807,000, exported a year ago. The chief markets for paraffin wax were England, China and Italy.

"We also exported 24,967 tons of lubricating greases, value $2,565,000, this year, an increase in quantity of 38 per cent above the 18,044 tons shipped during January-June, 1923.

"Crude petroleum was our eleventh import in value for the first half of 1924, and our leading import by volume—far outdistancing the other leading imports. We imported this year 7,173,790 tons of crude oil, value $36,844,000, as compared with 6,540,670 tons, value $25,454,000, during the corresponding half of 1923—a gain of 10 per cent in volume and 45 per cent in value. Practically all came from Mexico, with the Dutch, West Indies and Trinidad and Tobago, the next most important sources of supply.

"Large quantities of refined petroleum products were imported during the first six months of 1924, chiefly from Mexico, Peru and the Dutch West Indies. Our imports for this period totaled 1,401,700 tons, valued at $12,530,000, as compared with 1,071,800 tons, value $10,098,000 for the January-June period of 1923, an increase in quantity of 31 per cent and in value of 18 per cent."

GROWTH OF TRAFFIC IN OIL VIA PANAMA

The extent to which intercoastal trade and general canal traffic through the Panama Canal have been affected by the tanker movement may be inferred from the data that follow.

The high level in Mexican oil exports occurred during 1921-22, when 181,000,000 bbls. were exported, as compared with 135,500,000 bbls. in 1922-23 and 130,000,000 bbls. in 1923-24. The California fields in the same years showed a development, respectively, from 120,000,000 bbls. to 190,000,000 and to 238,000,000 bbls.; it is believed that this production will increase slightly during the coming year to its capacity maximum.

No statistics have been kept as to the exact movement of tankers engaged in the intercoastal trade, but it is estimated that approximately 80 per cent of the following figures can be considered as intercoastal.

Cargo by Tankers Through the Panama Canal, Jan. 1, 1922, to June 30, 1924
(In long tons.)

Fiscal year:	Atlantic to Pacific	Pacific to Atlantic	Total
1921-22*	373,227	188,281	561,508
1922-23	477,860	4,330,733	4,808,593
1923-24	454,785	9,706,818	10,161,603
Total	1,305,872	14,225,832	15,531,704

*Last 6 months.

EASTERN FIELDS

(Continued from Page 54)

that locality. On Pettit run, Washington Township, Green County, the Manufacturers Light & Heat Co. has a fair gasser in the Gas sand at No. 9 on the J. W. Closser farm.

In the borough of Braden, Beaver County, Black Brothers completed No. 3 on the B. F. Hicks farm, a 2 bbl. pumper in the 100-foot sand. At Duff City, Allegheny County, Leidecker & Co. have completed a 10-bbl. pumper in the Shee sand at a test on the Wattenpool farm.

Production Increased When Shot

In Perry Township, Green County, the South Penn Oil Co.'s test on the Owen & Renner farm, showing for a producer when drilled through the sand, was given a shot and responded by flowing 80 bbls. the ensuing 24 hours. In the same township, on Bacon Run, the Davis Oil & Gas Co.'s test on the T. J. Patterson farm is a 2,000,000 foot gasser in the Big Injun sand. On Big Shannon's Run, the Shannon Runs Oil & Gas Co.'s second test on the Andrew Kennedy farm is dry in the Big Injun sand. In Big Beaver Township, Beaver County, the H. K. Development Co. completed a second test on the A. Kerner farm, a very light pumper.

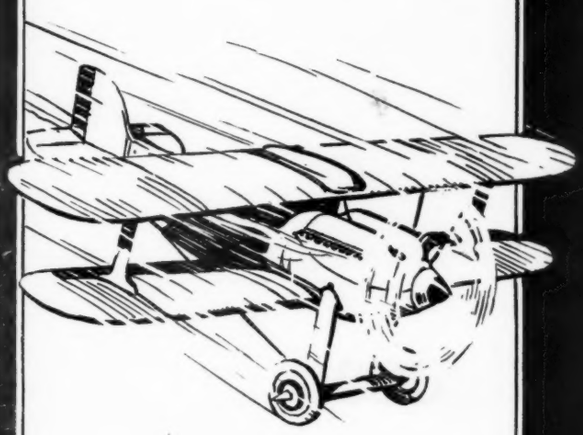
NEW TAGLIABUE CATALOGS

The C. J. Tagliabue Manufacturing Co., Brooklyn, N. Y., announces three new catalogs which describe a few of the many instruments made and marketed by this concern. Catalog 906 described the TAG recording pressure gauges. Catalog 918 described the company's oil refining equipment, including automatic controllers, recording and dial indicating thermometers, recording pressure gauges and industrial thermometers. Catalog 919 covers in condensed form the entire line of TAG oil testing instruments.

PIPE COIL CATALOG

The Midwest Pipe & Supply Co., St. Louis, Mo., has issued an attractive bulletin to the oil trade in which a large number of pipe coils, pipe and fittings of all kinds are described. Of particular interest are the continuous coils end welded by electrical resistance process. Pipe bends, expansion bends, extra heavy flanges and many kinds of heavy valves for refinery work also are described.

A remarkable example of Johns-Manville Service



Asbestos Suits delivered in 19 hours from Chicago to Denver

ASBESTOS suits—in a hurry.

That was the demand when the huge Mitchell gas well at Wellington, Colorado, caught fire and turned into a gigantic blow torch.

How Johns-Manville turned to and met this demand with almost unbelievable speed is told in the column at the right. It is a story of the difference between mere selling and real service.

This story proves two things: First, that the Johns-Manville organization is actually a co-operative part of the oil industry, working with it; and second, that a supply of Johns-Manville Asbestos Suits is an indispensable part of the emergency equipment of every oil company.

9341

Asbestos and its allied products
INSULATION
BRAKE LININGS
ROOFINGS
PACKINGS
CEMENTS
FIRE PROTECTION PRODUCTS

JOHNS-MANVILLE

Oil Industry Department

JOHNS-MANVILLE Inc., 292 Madison Ave., at 41st St., N. Y. C.
Branches in 62 Large Cities. For Canada: Candian Johns-Manville Co., Ltd., Toronto

Here's what happened when the fire started

Thursday, July 24

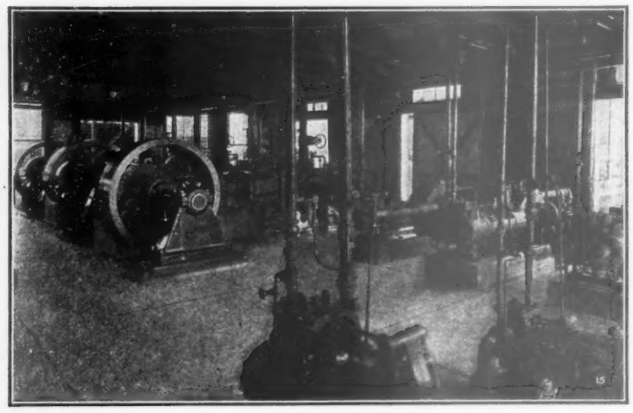
12:15 P. M.—Telegram filed by the manager of the Johns-Manville Denver Branch as follows: "Ship by air mail to Union Oil Company of California, Cheyenne, Wyoming, four asbestos suits with helmets, two suits size forty-four and two suits size forty-two, also four pairs asbestos shoes, size eleven. Hope you can ship from Waukegan tomorrow by air mail as above required to put out gas well fire immediately. Wire what service you are giving order."
2:36 P. M.—Telegram received in Chicago.
2:45 P. M.—Telegram delivered to Johns-Manville, Chicago.
5:00 P. M.—One complete asbestos suit delivered to post-office to be forwarded by air mail. Postage $35.20.
6:30 P. M.—Mail plane takes off.

Friday, July 25

5:05 A. M.—Mail plane arrives at Cheyenne, Wyo. Asbestos suit transferred to waiting automobile.
7:00 A. M.—Automobile arrives at Fort Collins, Colorado, with suit.

The other three suits were dispatched by air mail on the plane that left Chicago Friday morning at 6:30. The suits arrived at the scene of the fire the following (Saturday) morning. Postage $44.96. The Asbestos shoes were rushed from Manville Factory, Manville, N. J., and made the trip to the scene of the fire in approximately 24 hours.

ENGINEERS & CONTRACTORS IN NATURAL GAS AND OIL



Direct Evidence

Mere promises are of little worth, unless backed up by past achievement and proved capacity to deliver. Work well done is the only sound evidence of ability to do work that is to be done, well and profitably.

Thousands of miles of pipe lines for oil and gas—hundreds of gas compressing, gas boosting, oil pumping and gasoline extraction plants—designed and constructed by the Hope Company—prove the responsibility, the resourcefulness and the dependability of the Hope organization.

In placing your problems in the hands of Hope engineers, you will be following a precedent set by many big concerns whose one criterion is complete satisfaction.

HOPE SERVICE

Engineering counsel, design, construction and contracting—in pipe lines for oil and gas, oil pumping stations, gas compressing and boosting plants, gasoline recovery systems, city and inter-city gas mains.

UNIT RESPONSIBILITY

HES-8

ENGINEERS CONTRACTORS HOPE Engineering & Supply COMPANY DESIGNERS MANUFACTURERS

MT. VERNON, OHIO, U. S. A.

FRENCH SEEK SYNTHETIC GASOLINE; PREDICT SUCCESS WITHIN FIVE YEARS

By Charles E. Kern

WASHINGTON, D. C., Oct. 20.—Frequent references come from foreign countries, especially from France, of efforts to make synethetic gasoline, or at least a motor fuel capable of taking the place of gasoline in an internal combustion engine. Just now there is another report of this kind coming from Paris where it is declared that a French scientist has succeeded in producing synthetic petroleum which declaration was made at a recent meeting of the scientific congress there, the object of this synthetic petroleum being the relief of France from "foreign monopolies."

The report appearing in a Paris dispatch to the New York Times said somewhat enthusiastically:

"French chemists are apparently getting very near finding a substitute for gasoline. During last week at a conference of scientists on synthetic carburants two methods were described for providing fuel against the time when petroleum supplies of the earth become exhausted.

"One of these was used yesterday before the French aeronautical and automobile authorities. The first test was made with a fixed motor. Then the empty tank of an automobile was filled with the new substitute by one of the spectators. In both cases as good results were obtained as with ordinary gasoline. For its composition this new carburant needs only lignite coke and water, though charcoal dust has been used with equal success.

Prof. Mailhe's Process

"The second substitute was described at the conference by Professor Maihle of Toulouse. It was during a study of ether salts that he discovered the existence of an excess of hydrocarbon which led him to pursue his examination and in his own words 'discover a gasoline absolutely analogous to that of Pennsylvania.' His exreriments have since been continued in Holland and Germany with the same result. The product's calorific power—between 10,800 and 10,960 calories—equals the force of the natural product, he says. His raw material store animal and vegetable fats heated with chloride of magnesium or sodium, and only a simple apparatus is necessary.

"The problem of commercial manufacture, he admits, however, is not so simple, as the price of the animal and vegetable fats is prohibitive of success. To produce $85 worth of the synthetic oil it cost him more than $150. But though his role ends with establishment of the fact that artificial gasoline can be produced, he foresees the day when the French African colonies will be raising vast quantities of palm oil and castor oil for the production of motor fuel. A quarter of a million acres, he says, would produce annually 4,000,000 hectolitres of gasoline and 1,000,000 hectorlitres of lubricating oil.

"Going even further, Professor Maihle predicts that the essential raw material will be obtained from chlorophyl or the green matter of plants and become a by-product of paper production.

Optimistic Prediction

"Before five years artificial gasoline will be a competitor of the natural product, says Daniel Berthelot, famous French chemist and son of Marcellin Berthelot, who himself in 1866 made the first successful experiments in this direction.

"Daniel Berthelot is president of the Government committee appointed two years ago to study carburants, and under his direction the sub-committee on synthetic gasoline has constructed at Creil a big laboratory which will be opened next week and where experiments on an industrial scale will be carried out. At this laboratory all the results announced by independent scientists will be controlled, as well as all experiments and discoveries made in other countries; and new experiments also will be made.

"Of independent discoveries, M. Berthelot considers those made by Maihle, and jointly by Andry, Bourgeois and Oliver, the most important. Maihle, using fish and nut oil as raw material, obtained the whole gamut of petrols, but for the realization of any commercial manufacture there would be necessary the creation of immense plantations of oil-bearing plants, with the additional cost of transport.

"The process of Andry, Bourgeois and Oliver is based on the manufacture of gas from the action of water on coke, which releases hydrogen and carbonic oxide as the first phase. The second phase, by hydrogenation, gives methane or marsh gas. The methane is converted into acetylene, which in turn is converted by catalysis into liquid hydrocarbon, that is to say, gasoline.

"It is to this second method that M. Berthelot attaches the greatest importance, as the primary material will be lignite, of which large quantities are found in France. Of ultimate success he has no doubt.

"We will do for the commercial production of artificial gasoline exactly what has been done for the artificial production of nitrates, he says. In less than five years you will see factories for the artificial production of motor spirit all over France, competing against the oil gushers of Texas, Mexico and Russia."

The discovery by Professor Maihle, although inferently a failure because of the difficulty and cost of obtaining an adequate quantity of vegetables and animal oils to be used, caused the landing of the professor as the man who may revolutionize the world's oil trade, not to mention international politics, all of which may be set down as pure buncombe but typical of many other efforts to produce synthetic gasoline.

Most of the "synthetic gasoline" discussed by foreign experimenters is not synthetic at all but merely efforts of substitution of some other volatile product such as alcohol as an adulterant and this is a practical process only in locations where gasoline is sold at a much higher price than prevails in the United States. With gasoline at prices prevailing in this country motor fuel with alcohol is an adulterant would not be as cheap as is the best grade of pure gasoline.

No Synthetic Gasoline

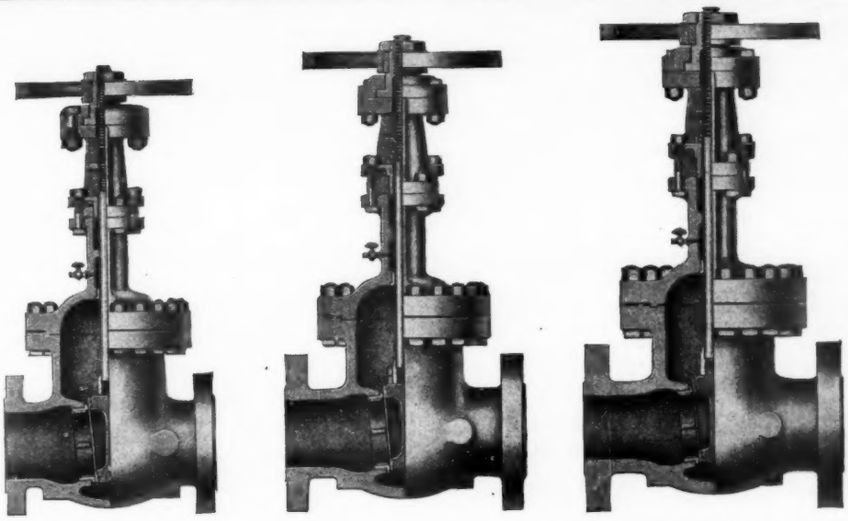
The truth is, real synthetic gasoline is as impossible an accomplishment with present-day knowledge as would be synthetic human flesh. The chemist may analyze and separate the chemical ingredients of which human flesh is composed but he would be dumbfounded in any attempt to chemically construct synthetic flesh. He might as well attempt to create a human being, a la Frankenstein, all of which lends itself to the imagination of a Jules Verne or a Marie Corelli rather than to the business of a scientist.

In the United States scientific bureaus such as the United States Bureau of Mines, Department of the Interior and the United States Bureau of Standards, Department of Commerce, efforts to increase the efficiency of motor fuel for the internal combustion engine have lent themselves to practical adaptation of gasoline for the various purposes for which it is used. These bureaus have in no conspicuous way been drawn into the ephermeral field of synthetic gasoline. The present abundant supply of gasoline from liquid petroleum drawn from the oil sands doubtless has much to do with this attitude, whereas in foreign countries its absence or scarcity lends itself to desperate efforts to find a substitute.

British petroleum scientists appear to have recognized the cold facts in respect to motor fuel for internal combustion engines as well as fuel oil for Diesel and other engines so that that Government and its nationals after the World War were energetic in acquiring

(Continued on Page 116)

New VALVES for the OIL INDUSTRY



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REFINING AND MARKETING

Penn-American and Pennzoil Companies Merged at Oil City

OIL CITY, Pa., Oct. 20.—A merger of the Penn-American Refining Co. and the Pennzoil Co. was completed at a meeting of the stockholders of the two companies held here. The name of the new company is to be the Pennzoil Co., a name which has made its products famous throughout the United States, both as a result of an extensive advertising program and the quality of the products. As a result of the merger the offices of the Pennzoil Co. will be moved in the near future to the office building of the Penn-American Refining Co. in Rouseville.

Both of the companies involved in the merger are well known throughout the oil world as well as locally. The refinery which is operated by the company is the largest in the Oil City district.

The following officers have been elected by the new company: President, C. L. Suhr; vice president, Louis Walz; secretary, D. J. Cavanaugh and treasurer, M. A. Brewster.

The board of directors elected for the company is composed of the officers and R. A. Browne, E. A. Burch and E. C. Breene.

The oldest property owned by the company is that which was erected by the Penn Refining Co., which was organized in 1886 by Samuel Justus, Henry Suhr and Louis Walz. The original investment was, of course, small and the company refined only gasoline, benzine and kerosene, the staple product being kerosene and the market for the benzine and gasoline was confined to their use in gas machines, the rubber industry and the paint trade. Tank cars were very little used in those days and most of the company's shipments were in barrels and cases.

Early History of the Company

The Penn Refining Co. made progress and in 1894 Mr. Walz and Mr. Suhr, together with several other local men, purchased the lubricating plant of the Valley Oil Works and organized the corporation known as the Germania Refining Co. In September, 1914 the Germania Refining Co. purchased the plant and business of the Penn Refining Co. and that refinery became the Germania's plant No. 2. In 1917 the name of the Germania Refining Co. was changed to the Penn-American Refining Co.

The organization of the Germania had been effected on February 20, 1894, by Henry Suhr, Louis Walz, C. Simmons, Charles H. Duncan and E. McCracken. Its plants is now the plant No. 1 of the Penn-American Refining Co. and is located in Rouseville.

The Pennzoil Co., the other concern involved in the merger, had its birth with the organization in 1911 of the Oil City Oil & Grease Co., by Charles L. Suhr, R. A. Browne and D. J. Cavanaugh. It was formed chiefly for the marketing of Pennsylvania lubricating oils of the highest quality. About that same time, a young man, Lou H. Johnson, come to Oil City for the purpose of buying lubricating oil for a firm in California and as a result of his visit a year later, he together with the local Pennzoil group, organized the Panama Lubricants Co., of California for the purpose of marketing Pennsylvania lubricants. This was the first big subsidiary of the Oil City concern and it is now one of the bggest parts of the Pennzoil Co.

The name Pennzoil was first adopted for the Oil City concern on January 21, 1922. Later in the same year the company purchased the New York properties of the Warren Oil Co., of New York, with A. S. Matthews as vice president and general manager. The business of the Pennzoil Co. has been steadily expanded until now Pennzoil is for sale in Ohio, Indiana, Michigan, New York, California, Pennsylvania, Maryland, Florida, District of Columbia, Arizona, Oregon and other States.

Mr. Walz is the only one of the organizers of the original Penn Refining Co., who is still alive. He continued active as general manager of the company until the sale of the Germania and since then he has been a director and vice president of the company, keeping in close touch with its affairs. He has been named vice president of the new company.

C. L. Suhr, the president of the company, has been connected with it since his boyhood days. He has been general manager of the refining plant since 1904 and president of the Penn-American since 1916. He is without doubt one of the best known men in Pennsylvania oil circles and is a director of the Pennsylvania Grade Crude Oil Association.

Mr. Cavanaugh has been connected with the Penn-American Refining Co. and its predecessors for more than a quarter of a century. Mr. Brewster has been connected with it since 1917 and has been treasurer for the past five years.

R. A. Browne, one of the directors of the company, has been secretary and general manager of the Pennzoil Co. of Pennsylvania since its organization.

The Pennzoil Oil Co. enjoys distribution in one-third of the States and its business increased 75 per cent last year based on distribution through jobbers, branch offices and warehouses in more than a dozen cities.

NORTH TEXAS MARKET FIRM DURING WEEK

FORT WORTH, Tex., Oct. 20.—The market for refined oil products in the North Texas district, continued firm during the past week, orders were plentiful with an increasing demand, refiners report being sold up to present production. New Navy gasoline continued to develop strength, with a steady increase in orders. There is but little surplus stock, with orders for immediate delivery exceeding supply.

The Price Is 7 Cents

An increase in orders forced the higher grades of gasoline up around ¼ cent, with 64-66, 375 end point generally quoted at 9 cents flat, with the market firm.

All grades of natural gasoline are firm, nearly all surplus stock has been sold, quotations for Double and Single A, are 8 to 8¼ cents. Double and Straight B, 7¾, C, 7 to 7½ cents. Fuel oil developed some strength, inquiries were numerous, at the week-end, but few of the refiners were quoting less than 95 cents, with a few shipments reported at $1, Wichita Falls, sellers cars. Kerosene showed the only weak spot, a slow demand forced the price back to 4½ cents for water white, a few sales were made at 4¼ cents, which is the generally credited price for prime white. Gas oil showed strong in demand, prices were firm, most sales were made at 2¾ cents. A few orders were placed at 3 cents. There is only a little of this product for sale at any reasonable price.

TO ENLARGE CASPER PLANT

CASPER, Wyo., Oct. 17.—It is reported here that the Standard Oil Co. of Indiana is to enlarge its pressure still plant located near here. The company has a large area on the north side of the Platte River at Casper that was built up by dredging the river and where 36 batteries of Burton pressure stills have been built. Three bridges connect this part of the plant with the main plant and a fourth bridge has been constructed the past summer that extends from the Midwest plant to the west end of this area.

PAN-AMERICAN SALES SHOW GREAT GROWTH

NEW YORK, Oct. 18.—The Pan American Petroleum & Transport Co., the first six months of this year distributed approximately 90,000,000 gallons of gasoline through its own bulk and service stations. This large distribution through its own wholesale and retail facilities was obtained although it was only a little over a year ago that the company first entered that end of the oil business. The company had previously sold the bulk of its gasoline output to Standard interests based on long time contracts.

About 100 retail stations have been opened in this country in 1924, this number not including the 50 odd stations of the American Oil Co., an affiliated company, nor Pan American's retail stations in Mexico, a number of which have been in operation earlier than this year.

Retail stations in this country have been fairly well standardized as to design and cost, the average running less than $100,000 for the building, pumps, piping and other station facilities outside of real estate. In specific cases, of course, more elaborate stations are provided, depending on location.

All told, upwards of $2,500,000 has been spent in 1924 for real estate in fee and the stations erected. Stations are being added all the time as favorable locations become available.

Development of retail stations has been most active in California, there being 37 Pan American stations retailing "Pan Am." Gasoline in Los Angeles alone. However, key locations have been obtained with stations in New England, New Jersey, Georgia, Florida, Louisiana, Tennessee and California. Through its interest in American Oil Co., Pan American has distributing facilities in Pennsylvania, Virginia, West Virginia, Washington, D. C., North and South Carolina and Maryland.

Based on domestic consumption and exports of gasoline in the first half of 1924, Pan American's gasoline sales of about 90,000,000 gallons in that period represented about 2½ per cent of the domestic demand and exports. This is rather a substantial part of the total for the country including exports, when it is considered that the largest part of Pan American's retail facilities have been the result of expansion during this year. Many of the stations were not opened until after July 1, while during the first half of the year there were nearly three months of seasonally small consumption as well as the fact that the stations were new and took time to get up to real gallonage in their respective territories.

MICHIGAN BUILT MOST ROADS; NO "GAS" TAX

The State of Michigan in 1923 without any gasoline tax built more miles of hard surfaced roads than any other State in the Union, according to a statement issued by the Michigan Oil Men's Association. The statement was issued in opposition to a proposed gasoline tax which will come before the next session of the State legislature in the form of a bill.

"If Michigan could lead the Nation last year in highway improvements—without any gasoline tax—she can continue the same record on the tax we already have," the statement says in part, "and there certainly is no reason to add to motorists' tax burdens simply to provide more money to spend for the cement manufacturers, the builders of road machinery, the big contractors, the officials who let big contracts and the politicians."

The Michigan Association last week issued the first number of its publication. Officials of the association at the present time are conducting a contest to secure a name for the publication.

WHITE EAGLE EARNINGS DURING THIRD QUARTER

The net income of the White Eagle Oil & Refining Co. for the quarter ending September 30, 1924, was $223,352.28 less than for the same quarter in 1923, according to an official statement issued by the company. The net earnings for the third quarter of this year was $304,818.34 and $28,170.62 the same quarter last year. Following is the statement of the company for the quarter ending September 30, 1924 and 1923.

	1924	1923
Sales	$4,508,907.30	$4,136,764.46
Cost of sales	3,464,831.71	2,936,771.46
Gross profit	$1,044,075.59	$1,200,993.00
Expenses—		
Gen'l administrative and selling exp.	711,625.68	663,998.84
Profit from operations	$332,449.91	$545,994.16
Add:		
Misc. income credits	76,279.78	73,582.80
Total income	$408,729.69	$619,496.26
Deduct:		
Misc. inc. charges	103,911.35	92,338.80
Net income	$304,818.34	$528,170.62
Net income first 6 months	1,618,967.57	1,734,594.37
Net income first 9 months	$1,923,785.91	$2,262,764.99

GASOLINE IS WEAKER OIL CITY REPORTS

OIL CITY, Pa., Oct. 18.—Gasoline became still weaker during the week in the northwestern Pennsylvania refined market. The price is down although there has not been much of a change in the demand.

Kerosene is off both as to demand and price. Cylinder stocks are a trifle weaker and the demand has decreased. Neutrals are in just as bad a condition as they were. Wax has become weaker. There has been little buying and some of the refiners are getting cleaned up with their orders with the result that prices have declined. Fuel oil is strong and the demand for it is greater.

HONGKONG USES MORE AMERICAN PETROLEUM

The consumption of petroleum products in Hongkong and its hinterland increased slightly during 1923, despite the unsettled conditions of southern China. American oil products continued to improve their position in all lines. About 65 per cent of the kerosene and 55 per cent of the fuel oil imported came from the United States. These figures represent increase of about 10 and 150 per cent, respectively. The greater demand for fuel oil was due to its growing use on ocean-going vessels calling at this port. Business in lubricating oils was very flourishing owing to the upward movement of prices. Imports from the United States increased by 37 per cent and amounted to 72 per cent.

Decreases in receipts from the United States occurred in benzine and gasoline. Imports of benzine from the United States decreased by 20 per cent, the leading position being taken by the Netherlands, East Indies, the foremost competitor of the United States for the petroleum trade of the port. The decrease in the imports of gasoline, on the other hand, has been accompanied by an increase of about 80 per cent in actual sales at points supplied from Hongkong. This discrepancy is explained by the fact that stocks imported during the latter part of 1922 were delivered in 1923.

VISITING MID-CONTINENT

J. D. Berry, of Oil City, Pa., president of James B. Berry's Sons Co., and C. B. Miller, of Chicago, vice president of the company, are visiting points in the Mid-Continent and Gulf Coast areas.

New Natural Gasoline Grades

Grades of Natural Gasoline as Manufactured by Chestnut & Smith Corporation
GRADE "A"
Gravity.... Not below 72° Be.
Not above 78° Be.
E. P..... Not over 375° F.
Recovery.. Not less than 90%
GRADE "B"
Gravity.... Not below 76° Be.
Not above 82° Be.
E. P..... Not over 375° F.
Recovery... Not less than 85%
GRADE "C"
Gravity.... Not below 80° Be
Not above 88° Be.
E. P..... Not over 350° F.
Recovery.. Not less than 78%
GRADE "D"
Gravity.... Not below 88° Be.
Not over 92° Be.
E. P..... Not above 350° F.
GRADE "2"
Gravity.. Not below 58° Be.
Not above 62° Be.
E. P..... Not over 450° F.
Recovery.. Not less than 90%
GRADE "3"
Gravity.... Not below 64° Be.
Not above 66° Be.
E. P..... Not over 440° F.
Recovery... Not less than 88%
GRADE "4"
Gravity.... Not above 70° Be.
E. P..... Not over 435° F.
Recovery... Not less than 85%

Beginning October 1st, 1924, the old grades quoted above are obsolete. Below are the new grades as adopted by the Association of Natural Gasoline Manufacturers:

OFFICIAL NATURAL GASOLINE GRADES, EFFECTIVE OCTOBER 1ST, 1924

GRADE "DOUBLE A"		GRADE "DOUBLE B"		GRADE "C"	
Recovery	Not below 90%	Recovery	Not below 85%	Recovery	Not below 78%
Endpoint	Not above 375°F	Endpoint	Not above 375°F	Endpoint	Not above 375°F
Gravity	80.0 to 87.9	Gravity	84.0 to 92.0	Gravity	80.0 to 90.0

GRADE "A"		GRADE "B"	
Recovery	Not below 90%	Recovery	Not below 85%
Endpoint	Not above 375°F	Endpoint	Not above 375°F
Gravity	72.0 to 79.9	Gravity	76.0 to 83.9

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Object to Arbitrary Specifications

Requirements Pertaining to Color and Odor of Gasolines Said to be Unnecessary and Burdensome

By Ralph T. Baker

Refiners in all parts of the country are voicing their protests against several of the arbitrary specifications for refined products which they are forced to meet. Chief among these requirements are those which involve treating and filtering of the refined products. Many of the specifications placed upon refined products are beneficial, giving the purchaser an index concerning the character and quality of the materials which he purchases. A few specifications are still demanded by purchasers who in many cases derive absolutely no benefit from adherence to these arbitrary requirements, which at the same time make a more expensive product. Many refiners express the belief that the dropping of useless specifications will be one of the important changes to be made soon, reacting to the benefit of refiner and consumer alike.

There is a good argument in favor of relief from the present specifications involving treating of light oils. The practice of treating gasoline, kerosene and distillate is continued largely as a result of a desire to get a good odor gasoline. It has been observed that the acid-caustic and other methods of treatment improve the odor of gasoline and kerosene. The matter of improving color through treatment has been another factor which has kept alive the practice. Treatment to produce doctor sweet gasoline also has been observed spcifically in some instances.

The Sulphur Content

The basis for treatment in the three cases mentioned above has hinged upon the sulphur content of the refined oils. Bad odor in gasoline and kerosene has been attributed to sulphur compounds. These compounds and their derivatives also are blamed for sour gasoline or gasoline which goes "off color." Elementary sulphur likewise is blamed for corrosion, which is the most active sulphur menace.

In reality then the problem of treating light oils has simmered down to a problem of the elimination of sulphur and sulphur compounds from these distillates. In some cases treating as it has been practiced really does no good, while in other cases it adds substances which cause harm instead of good. In any case treating is an expensive proposition, costing from ¼ to ½ cent per gallon plus evaporation losses, which must be added to the price obtained from the consumer.

Many refiners consider the doctor test one which carries very little benefit to the consumer. The following method is used for making the doctor test: Shake vigorously together in a test tube 10 cubic centimeters of the sample to be tested and 5 cubic centimeters of sodium plumbite solution for about 15 seconds. Add a small pinch of flowers of sulphur, again shake for 15 seconds and allow to settle. The quantity of sulphur used should be such that practically all of it floats on the interface between the sample and the sodium plumbite solution. This is the standard test specification as issued by the Federal Specifications Board, United States Bureau of Mines, covered in Technical Paper 323-A, entitled "United States Government Specifications for Lubricants and Liquid Fuels and Methods for Testing."

If the sample used above is discolored, or if the yellow color of the sulphur film is noticeably masked, the test shall be reported as positive and the sample condemned as "sour," the specification continues. If the sample remains unchanged in color, and if the sulphur film is bright yellow or only slightly discolored with gray or flecked with black, the test shall be reported negative and the sample considered "sweet."

The Doctor Solution

The sodium plumbite solution, or doctor solution, used in determining the sweet or sour gasoline, is made by dissolving approximately 125 grams of sodium hydroxide in 1 liter of distilled water. Sixty grames of litharge of lead oxide is added and the solution is shaken vigorously for 15 minutes or let stand with an occasional shaking for at least a day. The directions specify that the solution be allowed to settle and the clear liquid can then be siphoned off or decanted into another vessel. Filtration through a mat of asbestos may be employed if the solution does not settle clear. The solution should be kept in a tightly corked bottle and should be refiltered before use if not perfectly clear. Sulphur used in making the test should be the pure dry flowers of sulphur.

The question of the compounds which make gasoline sour is still being widely discussed. It is sufficient to say that many refiners contend that gasoline which is sour to doctor is every bit as good a motor fuel as that which is sweet to doctor. In addition, a certain amount of evaporation of the product must be charged against the treated gasoline, making it more expensive. In the process of making the gasoline sweet, free sulphur also is left in the gasoline, which unless removed by additional treating, is blamed for subsequent corrosion. One of the prominent refiners of the Mid-Continent contended that he preferred sour gasoline for motor fuel rather than gasoline which would act as a corrosive agent.

The matter of insistence to doctor sweet gasoline came about as the result of the demands of the export trade. A few years ago it was noticed by some purchasers that gasoline which had been in storage in tankage for a few months took on a lemon-colored appearance, or in other words went "off color." This phenomenon was attributed to the presence of readily decomposable sulphur compounds, which had a tendency to break down and throw the gasoline in storage off color and give a disagreeable odor to the liquid as well, thereby interfering with its sale to export buyers.

Why Doctor Test Is Used

As a result of this condition the doctor test, a purely arbitrary measure, was brought into play as a means of designating a gasoline which would stand in tankage at port several months without losing its color or odor, or depreciating in value. Several refiners now contend that the doctor test does not indicate that gasoline will maintain good color and odor after storage.

There is an increasingly large number of purchasers who are insisting upon using the copper corrosion and gumming test rather than the doctor test, although some are insisting upon both tests. In the corrosion test a bright copper vessel is filled with gasoline which is evaporated. If a residue is left in the vessel which turns the copper gray or black it is an indication that there are undesirable elements in the gasoline which will react in a harmful manner if used as motor fuel.

Four methods have been used for treating light oils, with varying success. They are the ordinary refinery acid-caustic method, the silica gel method, the hypochlorite method and the sodium plumbite method. As one chemist declared, "The details of the treatment will vary in accordance to the crude and the method of processing employed at the refinery as well as the character of the refined product required. Generally the treater is given entire charge of the work at the refinery and varies his treatment in accordance to conditions."

One of the methods which has been found particularly applicable to natural gasolines in a continuous treatment for doctor sweet products is known as the sodium plumbite method. It is generally conceded that doctor sourness is caused by the presence of organic sulphur compounds. Treatment by the sodium plumbite solution is said to change these sulphur compounds to other sulphur compounds which will not lose color or gve off noxious odors after standing. The method of treating consists in contacting the gasoline with a solution of litharge and caustic soda in the presence of elementary sulphur, which in reality is the accomplishment of the doctor test on a large scale.

Sodium Plumbite Process

As in the doctor test the sulphur compounds are precipitated, leaving the gasoline sweet. The decomposable sulphur compounds, not the elementary sulphur, are blamed for the doctor sourness. In this method the sodium plumbite is said to dissolve or change the nature of the decomposable sulphur compounds. The elementary sulphur is then added to precipitate the sulphur compounds and to regenerate the plumbite solution. Elementary sulphur, however, is taken up by the gasoline, often in sufficient amounts to cause corrosion, thus running into a greater difficulty while overcoming the original trouble.

In actual practice under the continuous method of treatment using the sodium plumbite process, it is necessary to by-pass 75 to 90 per cent of the gasoline around the sulphur tower giving only a small percentage of the gasoline actual contact with the rock sulphur. It is important in this method that the gasoline be given just enough elementary sulphur in solution and not too much. It is estimated that twith 5 to 25 per cent of the gasoline carrying the dissolved elementary sulphur, the gasoline will contain the right amount for the best reaction.

One of the greatest objections to the batch acid-caustic method of treating refined lights oils as practiced by the majority of the Mid-Continent refiners, is that the refiner penalizes himself in the treating process through the removal of a certain percentage of motor fuel from the gasoline as a result of the treatment. This portion which was removed is said by many of the prominent refinery chemists to be material which gives additional motor energy without damage to the motor and is in reality good fuel. Its loss as a result of the treatment creates an additional cost to the motorist.

Arbitrary Requirements

"There is no reason why petroleum products cannot be used in their native State as well as other products," declared one eminent refiner. "The public makes no kick because the coal which the people use is black and leaves ashes and soot as a result of combustion. But the same users of this coal demand that their gasoline and kerosene be made water white and odorless, a purely arbitrary requirement. It is foolish to insist upon this unnecessary treatment of motor fuels and burning oils since it does not add to their value for their purposes but which, because of the treatment, makes it necessary that a charge be set against this work. Some crudes produce gasoline that does not go off color. Other crudes give gasoline which does. Why penalize the refiner who is unable to get the better crudes, as long as the motor fuel which he produces gives the requisite power and satisfaction?"

In the matter of color, the Federal Government is becoming more lenient and is showing the way to other purchasers, according to refiners, recent requirements being made on the basis of only a 16 color on the Saybolt chromometer, while other buyers require as high as 25 plus, which is crystal white. Foreign buyers also are beginning to ask for gasoline which is non-corrosive instead of doctor sweet, while other buyers recognize the value of the corrosion test and have instituted it in their requirements, retaining the doctor test as well, making an additional difficulty for the refiners.

Hypochlorite Method

The hypochlorite method has been employed to produce doctor sweet gasoline and at the same time give a motor fuel which is non-corrosive. The hypochlorite method is used to eliminate the noxious compounds causing sourness, bad odor and

(Continued on Page 114)

The truck that can only carry 3 tons must make three trips to deliver 10 tons and then leave some behind, while the 5 ton truck will take it in two trips

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The Dubbs Process will take anything that's hydrocarbon in liquid form and deliver the goods at the lowest cost per gallon of gasoline produced

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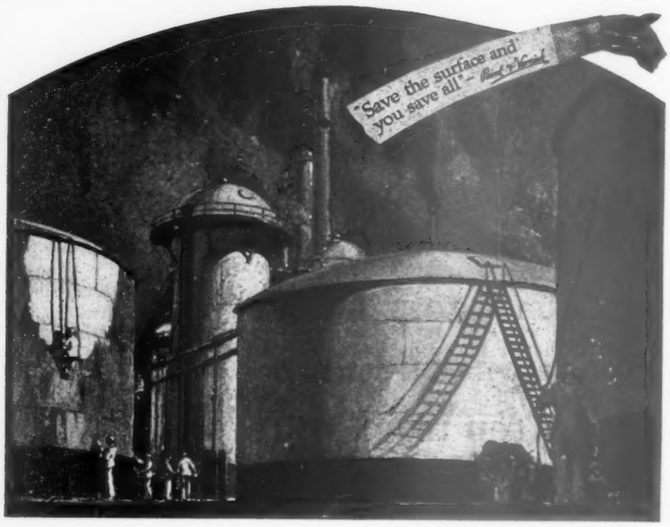

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COOK'S

EASTERN SALES CONTINUE BRISK BUT NO IMPROVEMENT IN PRICES

By N. O. Fanning

NEW YORK, Oct. 20.—Continued warm and sunny weather has stimulated gasoline sales in the East during the past week, but has not brought any improvement in the situation as regards prices. There has been a noticeable decline in tank car offerings, due to the recent sharp decline in the tank wagon market, and the price outlook is more steady.

A year ago prices at about this time had reached bottom. This has led to a belief on the part of some factors that history will repeat itself. The situation now, however, is not exactly the same as a year ago. Competition in the eastern gasoline markets this year has been keener than in 1923. Chief competition during 1923 was between the large marketers and the small ones, who succeeded by offering distress gasoline in breaking the market. This year, however, there has been a practical price war among the "big fellows," and there is no grounds for believing this war is yet at an end.

Distress offerings by a number of small concerns is looked upon in trade circles here as much less serious than by the large companies. Plainly, some of the latter have become tired of waiting for an opportunity to unload their large surplus at higher prices, and are ready to sacrifice in order to raise cash. It is not believed all the distress gasoline is yet absorbed.

Watching Crude Output

The large factors in the eastern gasoline markets are not likely to hold on to too large a supply of gasoline through the winter, when their crude supply is also top heavy. They are now engaged in watching the course of domestic crude oil production to get the first sign of a "break" in the large flush output. This will probably be the indication of a definite improvement in the oil situation, and therefore in gasoline, which is the dominant product. Continued large output of crude, however, is expected to be followed by a sharp cut in refinery production, so that stocks of gasoline can be cut down to safer levels.

But, as stated before, the price of gasoline is more apt to be governed by competitive conditions, rather than by outside factors, whose effect will not be felt for some time, such as the supply and demand. That is why, so far as the best opinion can be ascertained, there seems to be the possibility of a further reduction in tank wagon prices, though probably temporary.

Market Opinion

An analysis of the gasoline situation made by a company which is a big factor in the gasoline and crude oil situation both in the East and West, follows:

"One of the chief difficulties in assuring an adequate supply of gasoline for the motor car tanks and other sources of demand is the fact that this demand is in a great measure seasonal. The use of gasoline in the warm weather months, when pleasure car driving reaches its height, rises each year to a new pinnacle, and no sooner has the storage and delivery of an amount equal to the demand been solved than the demand increases. Thus the production, storage and delivery of gasoline to the consumer is a continual problem, a problem which is just as much the consumer's for he is vitally affected, as it is the problem of the producer and distributor.

"There is only one answer to the problem. That is to have always available a supply which is proportionately greater than we have been accustomed to storing and thus keep proportionately ahead of the growing demand. After all, the gasoline business is like any other business with seasonable demand, with the exception that we cannot yet expect the consumer to buy and store for use in periods of bid demand during the slack season.

"Gasoline consumption during the summer months increases so greatly that the winter consumption is small by comparison. Since 1917 records made by the United States Government show an increase in the demand so great the consumer is astounded. Our reserve supply at the beginning a few years ago was considerably less than two months of normal use. Normal use means an average struck from the figures compiled from the total yearly consumption. If the consumption during the spring and summer months is twice as much as it is during the cold winter months when pleasure cars are used in a majority of cases only occasionally, then that means the reserve supply during the hot months would not last as long as is estimated by drawing a daily average from the yearly figure.

"Gasoline is too important a product to have so small a working supply in reserve. What would happen if for some reason, and there are many logical reasons, everyone should use his motor car or motor truck twice as much as he does under normal conditions? You can estimate for yourself how soon we would be 'gasless.'

"Because we must produce in the winter a certain proportion of the supply used in the summer—because during the cold months we must build up a reserve which will carry us over the months when the consumption exceeds the supply, we must have more storage tanks, better and more extensive equipment for the transportation of gasoline to the big distribution centers. We must face the problem, producers and consumers, and the best brains of each group must solve this pressing problem."

Gasoline Taxes in Prospect

Massachusetts voters will cast ballots at the coming election to determine whether the State shall impose a gasoline tax of 2 cents per gallon. An Act authorizing such a tax was enacted by the Legislature in 1923, but its operation was suspended by the filing of a referendum petition. A lively campaign against the tax has been carried on during the last month by an organization known as the Automobilists' Protective Committee of Massachusetts.

The strong argument against the tax is that motor car owners see no tendency to reduce existing legislation fees, the gasoline tax, therefore, coming as an additional burden. Also that the motor car fees collected in the State have exceeded the sums which the Department of Public Works has been able to use for road construction and manufacture. The result of the referendum vote will be awaited with considerable interest by motor organizations in other eastern States, including New York, where the possibility of a gasoline tax has been broached from time to time.

The eastern States not having gasoline taxes at present are Massachusetts, New Jersey, New York and Rhode Island. The first three named are among the largest gasoline consuming States in the country.

Fuel Oil Steady

The only new feature of the fuel oil situation is the making of a contract for one year by Mexican Seaboard Oil Co. to sell to Sinclair Consolidated 10,000 bbls. of Panuco crude per day at 79 cents per bbl. at the well. This would indicate a price about $1 per bbl. at Tampico for Panuco oil, which is slightly above recent contracts, and is another straw tending to show the upward trend of fuel oil prices. However, any upward tendency would probably be modified by the fact that fuel oil is sold in competition with coal.

Gas Oil Firm

Gas oil is firm at 5 cents per gallon at refinery. New contracts for 1925, involving several hundred million gallons, are expected to be made at higher levels than those for 1924, probably 5½ cents per gallon, and possibly 6, due to the scarcity of the product.

Lubricants Unchanged

The lubricating oil market is unchanged, with the tendency soft. Spindle oils are in best demand and are firm, but cylinder stocks do not display any

(Continued on Page 92)

Officials and workers at a gusher. Well No. 27, Bibi-Eibat Field.

All-Russian Oil Syndicate

Oil Fields in Bakou (Azneft), Grosnii (Grosneft), Emba (Embaneft.)

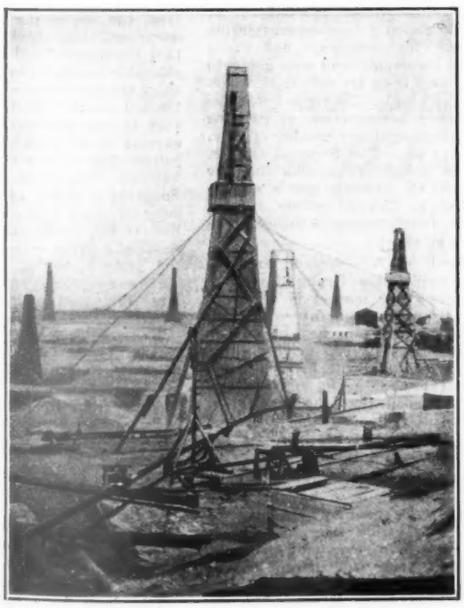
Sells Best Quality and any Quantity of:

Lubricating Oils **Kerosene** **Fuel Oil**
Gasoline **Crude Oil** **Naphten Acid**

General Agent for the United States

AMTORG TRADING CORPORATION

136 Liberty Street New York City



A gasser. Well No. 67 in the Sourachani Field.

A gasser. Well No. 67 in the Sourachani Field.

Half the Profit is in Buying Right

The marketing method which places any commodity in the hands of the ultimate user at the lowest cost is beyond doubt the one and only method that can be termed "true economy."

In almost every line of business the jobber represents this method. He acts as the one source of supply for retailers. By utilizing warehouses he is able to buy large quantities at one time from a wholesaler. In turn he can economically fill the varied orders from the retailers.

This is the case with the Acme Petroleum Co. By filling their tanks with oils from different parts of the country it is a simple matter for them to accommodate the individual needs of numerous retailers.

This method eliminates heavy overhead for the refiner and long-distance expensive buying for the retailer.

Such is the Acme method—try it and economize.

(This is thirteenth of a series of informatory advertisements on distribution problems with which the Oil Industry has to contend.)

ACME

Petroleum Company

Executive Offices: 624 S. Michigan Ave., Chicago

KANSAS CITY, MO. Land Bank Bldg.

DALLAS, TEXAS Magnolia Bldg.

OIL STORAGE PLANTS

Over 6,000,000 Gallons Storage

West Tulsa, Okla. Blue Island, Ill.

(Chicago Switching District)

GOOD WEATHER AIDS GASOLINE SALES

Continued Heavy Demand in Chicago Territory Strengthens Market With Indications October Business Will Be Comparable to Best Month of Year. Fuel Oil Demand Continues Steady

By John B. Waldo

CHICAGO, Oct. 20.—We are having glorious weather, the kind that comes once in a while and lingers sometimes until Christmas or New Years. The writer remembers some such seasons and old-timers say that this fall reminds them of the fall of 1871 after the Big Chicago fire. Then it was regarded as a sort of special dispensation of Providence for the many homeless. Possibly a kind of Providence is trying to make up to the oil men for a wretched summer. The distributors are doing a fine business. At the Standard Oil Co. it is said September was the best month of the year, so far, and that October is doing just about as well. Others say the same thing. One of the larger independent distributors stated that September was the best month that he had ever had and that judging by the way the station managers were ordering in the gasoline, this month was going to be as good.

If any proof were needed of the good business that is doing it would be the way that jobbers are hunting for cars in transit and paying extra prices for cars that can be delivered at their sidings in 24 hours. They are doing this because they need the oil. One of the big up-State Wisconsin companies phoned a marketer for some hurry-up gasoline Friday morning. The best that that marketer had to offer was a car one day out of Wichita Falls. The marketer did not expect to get the order but the jobber took the car and would have taken another and he paid the full market, 7 cents. He would have paid a quarter of a cent more for car that could be placed on his siding before Sunday morning. This is not unusual right now but typical.

Short of Requirements

It is currently reported that some of the largest of the independent organizations are short of their requirements of gasoline and among the concerns mentioned as in the market for supplies are the White Eagle, Sinclair, Pierce Oil and many others. The management of one of these recently was congratulating himself that his company had about cleaned out its supply and was going to stay clean and keep its refineries working on a small scale. This good weather with its heavy consumption of gasoline seems to have caught any number of them short of supplies. The Sandard Oil Co. (Ind.), has plenty of gasoline but the Standard Oil Co. (Ohio), was a considerable buyer in Chicago within a week or ten days and is expected to be in the market again shortly.

As a result of this demand and the position in which the Group 3 refiners find themselves, the market is decidedly stronger. Of course the future demand depends very largely on the continuance of good weather. With bright, clear days, the week-ends will bring a good business. The weather is so clear and the roads so good that the temptation to get out in the open and stay out "makes a man neglect his golf," is the way one oil man put it.

One thing that has kept the spot market soft locally at least has been the offering of excess gasoline by holders of contracts with wide margins. There were three or four companies that had contracts at a very wide margin and at the present condition of the price situation permitted them to underbid the refiner offering at the open market price. Several of these contracts are closed up now and others scaled down so that this factor for lower prices is removed and probably will not be felt again in the market. There are not going to be the same broad margins this season that there was last year. It is understood here that a 4-cent margin is plenty large enough, at least Cosden & Co. is reported to have so decided and the rest of the refiners say, "Amen, to that." Just what the basis will be is a question. It may be the tank wagon scale with restrictions and other influences such as the price of crude and the refinery price considered.

Market Is Stronger

The present market is at least 6¾ to 7 cents with less and less of the 6¾ cents gasoline selling and occasionally a sale made at 7¼ cents for immediate delivery. The feeling is that the real market to the jobber is 7 to 7¼ cents and that if the demand keeps up a little longer it will be 7¼ to 7½ cents by the end of the month. Jobbers are not stocking up except through their contracts. They are ordering out all the gasoline that is coming to them on these contracts because it is cheap gasoline today. In some cases refiners are refusing to deliver the full amount due under the contract where the buyer has not taken the full amount during the earlier months of the year but are shipping the same percentage of his gasoline that he took when the demand was less active or the contract price less favorable as compared wtih the spot market price.

There is no local demand for the 56-58 gravity and only a moderate amount of the higher gravities are selling but these are increasing somewhat in the amount of business done. Very little is doing in blends here and the situation as to these is a good deal mixed. Some of the jobbers are particularly their own blenders. The natural gasoline is in fair demand but supplies are easy to buy right now and the prices quoted are less than they were. Taking the situation as a whole it seems to most of the trade to be dependent on a continuance of the present weather.

Weather Big Factor

Ideas differ as to the result of a change in weather conditions. Many believe that the market would decline but some contend that the situation is so improved as regards stocks at the Group 3 plants and the added consumption that comes from the use of the closed car and the many additional taxi cabs and bus lines that the demand will be larger by a considerable degree than last year and not show the same proportionate decline that the fall months usually show as compared with the summer season. None right now expects to see 6-cent gasoline and many believe that there will be some important business done with foreign countries. Speaking of 6-cent gasoline, a large marketer offered a large oil jobber Navy gasoline at 6½ cents some weeks ago. He received a reply sent collect, stating that the jobbers' buying level was 6 cents. That same jobber was offering 6¾ cents late this week and could not get deliveries in time to meet his requirements.

Kerosene is moving rather slowly and if there were any quantity offered the prices would hardly hold but as the supply that is available seems to be light, judging from the offerings, the market is firm at 4¾ cents for the 41-43 gravity. There is demand enough to absorb the offerings although one large oil company has quite a heavy supply bought a month or more ago which it is holding for its own use presumably. The export movements is not noticeable here although some claim that there is a steady business going on largely with France.

Coal Prices Advanced

Distillates have had something of a setback from the warm weather and jobbers who were demanding prompt shipments are now asking that the deliveries be held back until the stocks on hand begin to move. Just what was predicted has happened. The consumers have

Pressed Steel Products

P.I.W.
PRESSED STEEL PRODUCTS

Why You Should Investigate The G-E-M Bilged Steel Barrel

Price—Our great production and patented method of manufacture permits the G-E-M Barrel to be sold for less than any other bilged steel container.

Hoops—The G-E-M Barrel alone has the hoop formations which prevent denting and crushing.

Drainage—Openings permit complete drainage and yet the plugs are not exposed to harmful contacts.

Thickness—The full 13 gauge is uniform throughout giving a perfectly balanced package.

Handling—The even balance and the bilge shape make it a one-man package.

The G-E-M Bilged Steel Barrel is furnished in 55 gallons capacity, black, galvanized or tinned.

Also, Presteel I. C. C. and Light Gauge Drums, from 15 to 110 gallons capacity.

Wire or write to our nearest sales office.

The Petroleum Iron Works Company

Pressed Steel Products Dep't.

SHARON, PA.

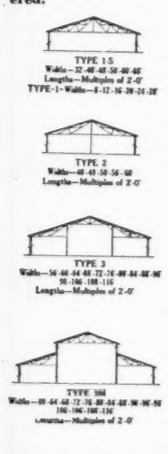
New York St. Louis Houston Tulsa San Francisco

TRUSCON
TRUSCON STEEL CO.
STANDARD BUILDINGS

Sturdy Weathertight Walls
An Exclusive Truscon Feature

Substantial copper steel plates in walls assure rigidity and long life. ***(1) Truscon Interlocking Joint, drawn together by wedge bolts, absolutely shuts out wind and rain. (2) Not a single hole is punched through exposed surfaces.***

SERIES "A" Truscon Copper Steel roof or "Steeldeck" roof, asbestos covered.

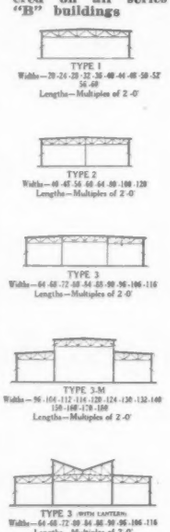


Lanterns if desired on Types 1-S, 2 & 3

Steel studs in joints stiffen wall. All parts are securely connected together. Contrast this wall with corrugated iron siding, with its light sheets wired to frame, holes punched for connection and loose laps for weather to enter.

The walls are one of the many features of Truscon Standard Buildings which give the purchaser the greatest value for his money. You have complete choice of types, sizes and arrangements. Standardized units assure the economy of quantity production, quick erection and small working force. No trouble or delays. One contract covers complete building. If you want the best value in building, get our suggestions and estimates, furnished without obligation to you. Return coupon or write.

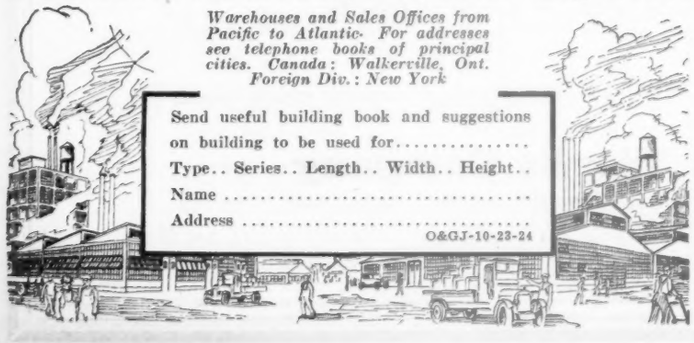
SERIES "B" Truscon "Steeldeck" roof, asbestos covered on all series "B" buildings



Lanterns if desired on Types 1, 2 and 3.

TRUSCON STEEL COMPANY
YOUNGSTOWN, OHIO, U. S. A.

Warehouses and Sales Offices from Pacific to Atlantic. For addresses see telephone books of principal cities. Canada: Walkerville, Ont. Foreign Div.: New York



Send useful building book and suggestions on building to be used for.....
Type.. Series.. Length.. Width.. Height..
Name .....
Address .....
O&GJ-10-23-24

filled their tanks and are waiting for cold weather. A hundred gallons of burner fuel will go a long ways toward keeping the house warm when all that is needed is an hour's heat night and morning. But it is different when the thermometer registers zero.

A rather amusing thing happened at a meeting of the coal dealers. A report was made purporting to be from some coal men who had added fuel oil departments. It stated, according to the report, that the profits on burner oil were too small, only ¼ to ½ cent a gallon and that the investment was too large. Evidently some of the coal men got disheartened very early in the business. So far as the writer knows, coal is not selling any better than oil. The coal man advanced his prices for domestic grades of coal promptly when the demand began from home owners filling their bins but the oil man is sticking to his prices. It is simply a case of the grass in the next field looking better than in their own pasture.

Fuel Oil Demand Good

There has been no substantial change in the fuel oil situation. The demand is steady and good although the majority of the orders are rather small. Some of the large steel companies are buying from five to twenty cars at a time and how they do shop around for prices. Some bids of 90 cents for 24-26 fuel oil made to steel companies did not get the orders. The outlook is for a great expansion to the steel industry in the Chicago district as the result of the doing away with the Pittsburgh plus method of making prices.

There is talk of a larger supply of Smackover crude being available as the result of negotiations in Mexico. The impression is that something has been settled that will cause a larger production almost immediately. Others do not so understand the brief announcements that have come out of Mexico City and believe that it relates to the terms on which new districts are to be developed. If the latter is the case, it will be some time before the Mexican heavy crude will displace the Smackover product. The report that California fuel oil is easier may mean that some of the demand from the Southwest will be filled from the West Coast. Right now there is little change here observable. Prices are firm at 90 to 95 cents and there is no surplus of oil offered although it is stated that there is no trouble to fill orders at the market. The difficulty has been to buy oil at a price that would show a profit on business taken at 90 cents and less.

Gas oil shows very little change. Some say it is a little easier and all agree that it is more freely offered and that since the demand for gas oil to be used as domestic heater fuel has dropped off with the warm weather that the sales are light. Many of the gas companies are now using fuel oil and the demand from some industrial units that usually change about this time from a heavy fuel oil to gas oil is slow in coming to hand this season. The market is generally quoted as 2¾ cents for the 32-36 gas oil.

Tank Wagon Unchanged

Lubricating oils are easy except for the zero oils which are in demand and are firm. Cosden & Co.'s new price list averages about a cent lower but it is above the prices already quoted by some competitors and seems to be above the market even yet. The demand for the Mid-Continent grades is still moderate and buyers are demanding concessions. Of course the railways are using a lot of lubricants but these are taken against contracts which makes the holder of the contract busy but has little effect on the market with stocks as large as they are judging by the freedom with which offers are made and the keen competition for any sizable order.

Tank wagon prices are unchanged and the situation over the territory is greatly improved so far as price cutting is concerned. Higher refinery prices and larger sales have combined to make the price cutter see the error that he would be committing if he persisted in cutting below the market. Many of the price cutters sell nothing but gasoline and auto lubricants in packages and are of small account as competitors once the touring season is past. Many are stated to have discontinued business temporarily at least. They may resume another season if conditions warrant. They still have the pumps and tanks.

The attention of the attorney general, judging from recent utterances, is focused on the expense of distribution and the claim of too many filling stations as part of the excessive expense. In some few localities refusals have been made of permits for new stations on the ground of fire hazard. No actions that might be taken to limit the number of filling stations could legally affect those for which permits had been issued and which had been built and were in operation. Some of the largest companies are very busy even now extending the number of their filling stations and it might be that there was back of this present activity the thought that something might be done to prevent the increase of the number of stations. At any rate in many cities there are no more really desirable sites left for filling stations and where there are any the prices asked for the property is excessive. The Standard Oil Co. (Indiana) has a vast asset in its filling station sites in Chicago. They are worth today much more than they were when they were acquired and the value is increasing each year.

SALES BRISK BUT NO IMPROVEMENT IN PRICES

(Continued from Page 88)

activity at the present time. Movement of lubricants into "smoke-stack trade" channels is not as brisk as could be expected at this time of year, this business appearing to be in a between-seasons state. Leading manufacturers are cautious, but as soon as the winter outlook for trade can be determined, new buying is to be expected of good proportions.

Wax is firm, but business is dull. Prices are unchanged.

Export Market Strong

Chief interest in the oil markets in eastern refinery circles centers in the export situation. The success of the German loan is believed to be an indication of returning normalcy in Europe, and the fact that already business in oil products with Germany is showing definite improvements has raised hopes for the future to a high pitch. Improvement is expected to be communicated into all European markets, and therefore the outlook for bulk export business is bright. It will be noted that export quotations have remained unchanged in the face of a sharp break in domestic prices, which is an extremely unusual occurrence. It is attributed to the fact that foreign purchasers look upon the present low rates in the United States as temporary and continue to bid for oil at present levels, instead of holding off in anticipation of lower export prices.

Bulk Movement Large

During the week ended October 15 bulk shipments from New York were unusually heavy, exceeding 10,000,000 gallons. The largest single item was kerosene, bulk exports of which totaled 7,249,488 gallons, the largest recorded in many months. Bulk shipments of both gasoline and lubricating oil were of good proportions. Belgium, England and Sweden were the countries to which the bulk shipments were consigned.

Another feature of the export movement during the week was the heavy shipments of lubricating oil in barrels, and large shipments of paraffin wax. The former movement aggregated 24,846 bbls., and the latter 2,260,940 pounds.

The following table shows principal exports of petroleum and petroleum products from New York during the past three weeks:

	Week ended		
Gasoline—	Oct. 15	Oct. 8	Oct. 1
Bulk, Gals. ..	1,166,286	2,731,144	1,371,530
Cases, No. ...	183,592	116,252	193,307
Kerosene—			
Bulk, Gals. ..	7,249,488	.....	4,418,143
Cases, No. ...	307,500	64,662	218,884
Gas Oil—			
Bulk, Gals ..	.....	.....	609,500
Lubricating oil—			
Bulk, Gals. .	*1,920,115	.....	2,105,651
Barrels, No. .	24,846	2,748	2,283

"Be Square Products"

BARNSDALL

Engaged in Every Branch of the Petroleum Industry

The BARNSDALL REFINING COMPANY is one of the subsidiaries of the BARNSDALL CORPORATION, which has assets of over Forty Million ($40,000,000) Dollars;

With twenty-seven thousand domestic gas customers in twenty-eight municipalities in the states of New York and Pennsylvania;

With a complete mining organization engaged in mining gold, silver, copper, lead, zinc and other metals and producing the only pure tripoli in the world out of which is manufactured useful household articles superior in quality to those now being supplied to the market because tripoli is Nature's product.

With approximately 300,000 acres of oil and gas leases extending from Pennsylvania to California—with only ninety thousand acres operated and developed, upon which there are twenty-six hundred oil wells producing more than seven thousand barrels of crude oil daily and six hundred twenty-five gas wells, and six hundred miles of pipe lines;

With a fully equipped, complete, modern refinery located at Barnsdall, Oklahoma, in the heart of the corporation's mid-continent production, with over one hundred miles of pipe line transporting the crude oil to the refinery, where it is manufactured into high grade, uniform quality products, including Lubricating Oils, Cylinder Stocks and Wax;

With twelve absorption gasoline plants to extract the natural gasoline from the casing head gas of the producing oil wells and a fleet of steel tank cars for shipping and transporting all of its refined oils to market;

With an export department constantly preparing shipments of Barnsdall Products for export to European countries and South America, through the ports of New Orleans and Mobile;

With a large warehouse and storage plant in Kansas City, Mo., with distributing stations well located in the agricultural country of Missouri and Kansas.

Our Own Crude
Our Own Pipe Lines
Our Own Refinery
Our Own Tank Cars

"A Dependable Source Supply"

Barnsdall Refining Company

910 South Michigan Ave., Chicago, U. S. A.

New York Pittsburgh Detroit St. Louis Kansas City St. Paul Los Angeles Tulsa

Foreign Offices:
Paris Buenos Aires
Antwerp
Cable Address: Bigheart, Chicago

TEXACO

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TEXACO

Petroleum Products

HIGH GRADE UNIFORM QUALITY

Gasoline
Kerosene
Fuel Oils
Bunker Oils
Diesel Fuels
Signal Oils
Miners Oil
Gas Oil
Distillates
Spindle Oils
Motor Oils
Engine Oils
Dynamo Oils
Machine Oils
Cylinder Oils
Cylinder Stocks
Car Oils

Greases
Cup Greases
Gear Greases
Gear Lubricants
Axle Greases
Wire Rope Lubricants
Pale Oils
Red Oils
Black Oils
Floor Oils
Waxes
Asphalts
Road Oils
Asphalt Cement
Pipe Coating
Roofing
Roofing Paper
Roofing Cement

THE TEXAS COMPANY

NEW YORK 17 Battery Place
CHICAGO McCormick Bldg.
HOUSTON The Texas Co. Bldg.

Offices in Principal Cities

Export Dept.: 17 Battery Place, New York City

Cases, No.	7,002	11,588	4,836
Lubricating greases—			
Barrels, No.	.....	.....	2,147
Cases, No.	.....	.....	6,537
Paraffin wax—			
Pounds, No.	2,260,940	.....	439,340
Turpentine substitute—			
Bulk, Gals.	.....	.....	210,049
Cases, No.	.....	3,800	.....
Petroleum asphalt—			
Barrels, No.	1,200	.....	.....
Petroleum coke—			
Tons, No	596	.....	.....
Crude oil—			
Barrels, No.	3,098	.....	2,278

Case shipments were up to normal during the week, much of the movement being to South African ports. Case exports to China were quite small, as has been the case during the last three weeks.

Oil Receipts Fall Sharply

A sharp decrease in receipts of crude and refined oil at Atlantic Coast ports during the week ended October 15 is believed to reflect a slowing down in refinery operations and decline in consumption on the Atlantic seaboard. Receipts from the Gulf Coast were the smallest since April, last, averaging only 185,000 bbls. daily, while receipts from the Pacific Coast averaged only 73,000 bbls. daily and imports only 59,000 bbls. daily. The total movement, averaging 317,000 bbls. daily, represents a decline of 240,000 bbls. from the preceding week.

The largest decrease in receipts is attributed to high grade crude oil used in the manufacture of gasoline. It is understood this is being partly offset by increased deliveries of Mid-Continent crude to Atlantic Coast refineries by pipe line.

The following table shows estimated daily average receipts of crude and refined oil by water at Atlantic Coast ports from the Gulf and Pacific Coasts of the United States, and imports, for the last three weeks; also monthly record for the last 13 months (in barrels):

	Week ended		
	Oct. 15	Oct. 8	Oct. 1
Gulf Coast	185,000	233,000	251,000
Pacific Coast	73,000	180,000	139,000
*Imports	59,000	144,000	55,000
Total	317,000	557,000	445,000

Daily Averages by Months

1924—	Gulf	Pacific	Imports	Total
September	270,000	104,000	101,000	475,000
August	310,000	127,000	84,000	521,000
July	318,000	85,000	114,000	517,000
June	302,000	133,000	136,000	571,000
May	276,000	122,000	144,000	542,000
April	262,000	143,000	123,000	528,000
March	201,000	137,000	130,000	468,000
February	174,000	175,000	108,000	457,000
January	127,000	159,000	79,000	365,000
1923—				
December	184,000	153,000	119,000	456,000
November	186,000	141,000	110,000	437,000
October	200,000	164,000	133,000	497,000
September	155,000	146,000	107,000	408,000

*Imports from Mexico with exception of 72,000 bbls., or 10,000 bbls. daily, from Venezuela during week ended October 8 and 60,000 bbls., or 9,000 bbls. daily, from Venezuela during week ended October 1.

NORTH CENTRAL TEXAS

(Continued from Page 37)

Four miles west and a little north of er, will plug at 2,086 feet; Carter and others' No. 1 Jennings, drilling at 2,075 feet; No. 1 Texas Pacific, drilling at 2,065 feet; Fouts and others' No. 1 McCleskey, drilling in blue shale at 2,550 feet; Humble Oil & Refining Co.'s No. 10 O'Laughlin, sidereaming for 8-inch casing at 2,398 feet; Kleinfielder and others' No. 1 Grimes, drilling in brown shale at 1,125 feet; Knox Lewis Oil Co.'s No. 1 Flournoy, drilling in rock at 2,375 feet; Landreth Oil Co.'s No. 1 Ward, drilling at 1,850 feet; Magnolia Petroleum Co.'s No. 9 Brown, drilling at 3,390 feet.

Eastland County Drilling

Brothers Oil Co.'s No. 1 Watkins, drilling at 3,150 feet; Dixie Oil Co.'s No. 1 Brashear, spudding; Hart and others' No. 1 Davenport, drilling in brown shale at 800 feet Hodnett and others' No. 1 Sidley, drilling at 755 feet; Lebaugh and others' No. 2 Holcomb, drilling at 400 feet; Magnolia Petroleum Co.'s No. 17 Westmoreland, drilling in brown shale at 990 feet; Reclamation Oil Co.'s No. 6 Bond, fishing for casing at 2,500 feet; States Oil Corp.'s No. 8 Quiett, drilling in shale at 2,000 feet; Keogh Brothers' No. 10 Gooch, spudding; Ladd and others' No. 1 Owens, spudding; McMeans and others' No. 1-A Storm, spudding; and No. 1 Storm, spudding; Reilly and others' No. 1 McClellan, underreaming at 650 feet; Rosenfield and others' No. 1 Bruneet, underreaming for 8¼-inch casing at 3,198 feet; Root and others' No. 1 Ammerman, drilling in shale at [illegible] feet; No. 1 Hart, spudding.

N. LOUISIANA-ARKANSAS

(Contiued from Page 48)

Greenwood, adjoining the new Waskom gas field, the Waterman Drilling & Development Co. has derrick up for No. 1 Waterman in Section 18-17-16, and R. O. Wells and others for No. 1 Stringfellow in the same section.

Caldwell Parish

Culver and others tested salt water and are waiting orders at 2,700 feet in No. 1 fee, Section 21-14-4, 5 miles north of Columbia.

Claiborne Parish

The El Dorado Chief Oil Co. is drilling at 1,600 feet in shale and boulders in No. 1 McElwee, Section 13-22-7, 7 miles north of Homer.

The Gulf Refining Co. is drilling at 2,910 feet in No. 1 Farmer, Section 35-23-6, 10 miles northeast of Homer.

Pomeroy and others are drilling at 1,800 feet in No. 1 Hamon, Section 34-20-6, 8 miles southwest of Homer.

De Soto Parish

The Greyhound Syndicate is shut down at 2,530 feet in No. 1 Pollock, Section 36-11-14, 14 miles southeast of Logansport.

A. H. Tarver and others is shut down at 2,900 feet in No. 1 Hewitt-Hicks, Section 10-11-14, 10 miles east of Logansport.

Dr. C. C. Wright and others are arranging to deepen No. 2 Sutherland, Section 15-12-14, formerly abandoned at 2,614 feet. The well is located 5 miles west and a little south of Mansfield.

Grant Parish

The Grant Parish Petroleum Co. is rigging up to drill No. 2 Ball in Section 1-7-1w, between Winnfield and Alexandria.

Monroe Gas Field

Ladel and others are drilling at 1,200 feet in No. 3 White, Section 33-20-5; the Oil Field Exploration Co. has set 8-inch casing at 945 feet in No. 1 Betz, Section 41-21-5, and the Stovall Drilling Co. has set 12½-inch casing at 180 feet in No. 1 fee, Section 27-21-4.

Ouachita Parish

The Chester Carbon Co. is drilling at 620 feet in No. 1 Wetzell, Section 36-19-4; Dickson & Frue are drilling at 1,400 feet in No. 1 Goodwin, Section 24-18-2; Ladel and others are testing at 2,225 feet in No. 29 fee, Section 33-20-5, and drilling at 1,700 feet in No. 30 fee, Section 10-19-5, and the Ouachita Natural Gas Co. is drilling at 680 feet in No. 3 Trezevant, Section 40-20-4.

The Palmer Corp. is reaming to bottom at 2,240 feet in No. 3 Lieber, Section 4-19-5; the Southern Carbon Co. has set 6-inch casing at 2,175 feet in No. 38 fee, Section 29-19-5, drilling at 1,490 feet in No. 39 fee, Section 29-19-5, at 2,080 feet in No. 40, Section 7-19-5, and set 8-inch at 905 feet in No. 41 in the same section, and The Texas Co. has set 8-inch casing at 830 feet in No. 3 Ladel, Section 11-19-4.

Union Parish

The Danziger Oil Co. has set 8-inch casing at 900 feet in No. 1 Grayling, Section 32-21-4; the Jones Walker Oil Co. has set 14-inch at 190 feet in No. 1 Feazel, Section 6-19-2e, and the Natural Gas Producing Co. has set 10-inch at 185 feet in No. 2 Grayling Section 8-21-4.

The Simms Oil Co. has made a location for No. 1 James in Section 16-22-3w, 5 miles north of Bernice.

Columbia County, Arkansas

The Magnolia Petroleum Co. is drilling at 1,000 feet in No. 2 J R Hammond, Section 25-15-20; Phillips and others at 1,400 feet in No. 1 Davis, Section 25-12-21, and Russell & Kent at 1,300 feet in No. 1 Emerson, Section 7-19-19.

Hempstead County

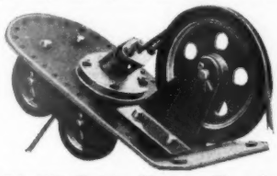
The Fullilove Drilling Co. is drilling in sandy shale at 1,820 feet in No. 1 Ford, Section 31-14-23.

Nevada County

The Kenark Oil Co. is drilling in rock at 1,835 feet in No. 1 Honea, Section 12-13-21.

OCECO
Swing Line Equipment

OCECO Safety Tank Winch
Made of the best materials with a high factor of safety, for the handling of swing lines of all sizes and lengths.



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Replaces old fashioned windlass housing. Eliminates fire hazard and evaporation. Reduces insurance rates.

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One piece unit already to rivet to tank shell. Extra heavy cast steel. Absolutely rigid.

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Fitted with a shoulder approximately three times the size of that used on the ordinary swing joint, much greater bearing surface.

100% Safe

The OCECO Safety Tank Winch

Here's a tank winch that offers 100% safety for your operator, your tank and its contents.

Safety for operator!

Conveniently located on the side of the tank, the OCECO Safety Tank Winch (together with Cable Sheave Bracket) eliminates the danger of climbing to wet, icy, slippery roofs.

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Driven by a worm gear this winch locks when the operator takes his hand off the handle. No danger of broken arms; no danger of holes punched in tank bottom by falling swing line.

Safety for contents of tank!

And tamper-proof! When the handle is removed the OCECO Safety Tank Winch is securely locked.

These advantages of OCECO are important. The lower operating costs and maintenance mean real savings. Is it any wonder that as a part of OCECO Swing Line Equipment this Safety Tank Winch is the most popular and widely used on the market today?

THE OIL CONSERVATION ENGINEERING COMPANY

Manufacturers of fire-prevention and evaporation-prevention equipment for tanks

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25 CENTS per line first insertion; 15c per line each additional insertion. Cash in advance.

CLASSIFIED WANTS

MAIL your advertisement now. It will be published next week. Cash with order.

FOR SALE—EQUIPMENT

TANK CARS

8,000-gallon, all steel construction, with steam coils. Bargain price.

In stock for immediate shipment; cars of any kind, both passenger and freight.

HOUSTON RAILWAY CAR CO.
Houston, Texas

SPECIAL SALE OF TRAILERS

Roller-bearing steel trailers; 1½ and 2-ton capacity; complete or parts for same at bargain prices; come and see them. Reedy Auto Truck & Trailer Co., 900 N. Xanthus, Tulsa, Okla., Osage 862.

FOR SALE—A sacrifice, two 38 Star tractor drilling machines in good condition; plenty good tools; $2,000. Box 496, Bowling Green, Ky.

FOR SALE

Complete string of standard tools from 18" down. 45 h. p. Oil well boiler, everything in good condition, would consider trade on clear Kansas land. C. E. Hawks, Emporia, Kansas.

12" PLAIN END PIPE

For sale, two miles twelve-inch plain end thirty-pound pipe ready for loading Independence, Kans.

STOCKMAN & FEES
Chanute, Kans.

FOR SALE—Bessemer gas engines 15 to 165 h. p. A lot of others up to 350 h. p. Belt and direct drive compressors. Oil and steam engines. Generators and compressors. R. W. Russell, St. Mary's W. Va.

FOR SALE—Complete gasoline plant, two 70-h. p. Bessemer gas engines, one 12x6x12 Ingersoll-Rand Compressor, one 17x12 Ingersoll-Rand Duplex Pump, high and low storage tanks, electric light plant. R. W. Russell, St. Marys' W. Va.

ENGINES, Steam, Gas and Gasoline. Pumps, Air Compressors, Mining and Hoisting machinery. Machine shop, Wood working, Factory, Mill and Electric Machinery and supplies; furnish and install freight, passenger and hand elevators. New, slightly used and rebuilt machinery at a bargain. Builders of machinery and elevators.
RAFINER ELEVATOR WORKS
Kansas City, Missouri

FOR SALE—One Putnam 24" swing by 24' bed screw cutting engine lathe. Will cut threads from 1/16- to 1". Also two 45 horsepower Charter Gas Engines in good repair. Address Wm. Schick, Topeka, Kans.

BOILER TUBES—For sale at a bargain, new 3-inch by 8-ft. boiler tubes. Our price will even interest dealers.
The U. S. Tool & Supply Co.
Steubenville, Ohio

FOR SALE

Several cars of 8¼-inch 24-lb., and 6⅝-inch, 17-lb. casing, all in first class condition and ready to ship. Write or wire Box A-432, The Oil and Gas Journal, Tulsa, Okla.

BRAND NEW, original crates, two No. 4 Toledo pipe threaders for 9-inch, 10-inch and 12-inch pipe. Price $185 each, f.o.b. cars, New York. Allen Ashley, 152 West 42nd Street, New York, N. Y.

1 new Ingersoll-Rand XB-1 vacuum pump, cylinders 20"x12", belt driven.
1 used Ingersoll-Rand Class A air compressor, 14"x14¼"x18", steam driven.
I used Ingersoll-Rand Class A air compressor, 16"x16¼"x18", steam driven.
DOLESE BROS. CO.
13 West 13th St. Oklahoma City, Okla.

FOR SALE—Two natural gas engines; one is a Bessemer 15-h.p. engine that will develop 25 or 30-h.p. The other is a 2-cylinder 27-h.p. Bruce-MacBeth vertical engine. Reasonable. Box A-456, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE—String of tools, 18-inch down to 6⅝-inch; also string of casing, 15-inch down to 6-inch; Address King & Connor, 500 S. Ninth St., Ponca City, Okla. Phone 77.

FOR SALE—EQUIPMENT

FOR SALE—Eight 7,200-gallon tank cars, standard gauge, also five 5,000-gallon tank cars, for trolley car track; sixteen 1-ton Koppel coal charging cars for boiler rooms. Immense stocks of pipe, valves and fittings in all sizes. Wire, phone or write. Tate, Fisher & Rice Co., 258 Washington St., Boston, Mass. Telephone Main 8365.

FOR SALE

Eleven De Laval Steam Driven Oil Separators—Type 601

These machines are in first class condition and have copper lined bowls and copper Tinware.

This Is a Real Bargan

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H. F. WILCOX OIL & GAS CO.

Wilcox Building Phone Osage 8015

Tulsa, Okla.

A BARGAIN—Practically new 10-ton Holt Caterpillar and three Troy Trailers all in A-1 condition. Address Box 82, Morris, Okla.

FOR SALE—150 feet of 70-pound 15½-inch; 1,000 feet 40-pound 10-inch; 2,700 feet 8¼-inch 32-pound 8-thread and 3,400 feet of new 24-pound 6¼-inch 10-thread J. & L. Woodlawn. Special casing; 100,000 feet of 2-inch line; 20,000 feet of 2-inch tubing and rods; also excellent powers, engines, tanks and other equipment. J. F. Arnold Co., Decatur, Ind.

Watch this space from time to time for real bargains.
PLAIN END PIPE FOR GAS LINES

We have available for immediate shipment, 80,000 feet 4-inch; 30,000 feet 5½-inch; 30,000 feet 6-inch, and 25,000 feet 6½-inch Odee plain end pipe; first class material; thoroughly reconditioned, with plain ends ready for welding in the field. This material is furnished in double joints which will enable you to cut your installation cost in half. The price of the pipe will likewise cut your cost about in half.

JOS. GREENSPON'S SONS
IRON & STEEL CO.
Department O St. Louis, Mo.

FOR SALE—EQUIPMENT

FOR SALE—3,400 feet of 5 7/16-inch, 20-lb. pipe; good as new. Box 658, Muskogee, Okla.

LEASES—PRODUCTION

PROMOTERS—If you can handle big deal in Fort Collins district, have most attractive proposition to offer for quick action. Wire or write J. P. Alexander, 4220 King St., Denver, Colo.

FOR SALE—Some choice leases and royalties in the famous Tonkawa district. For particulars address P. O. Box 1273, Tonkawa, Okla.

FOR SALE 7 bbls. production, Warren County, Kentucky. Address Box 496, Bowling Green, Ky.

NEW MEXICO OIL & GAS LEASES
Forty acres for $10. We offer five-year leases in Valencia, McKinley, Sandoval, Torrence, Guadalupe, Quay, De Baca, Rio Arribba, Soccorro and Chaves Counties, from 25 cents per acre. Perfect titles and low rentals. Write for maps and particulars.
NEW MEXICAN EAGLE OIL CO.
Sapulpa, Okla.

FOR SALE 30,000 acres of lease near Mier, south of the Miranda Field, good geology. Leases run for 60 years; very cheap rentals. Address, Room 402, California Building, Denver, Colorado

FOR SALE 38,000 acres oil and gas leases, approved form. Breckenridge County, Ky., part joining block on which English Syndicate now drilling 4,000-foot test. ⅛ royalty, 25c rental, first rental due October 1925. Priced right for quick sale. Splendid opportunity for large interests. Write Box 32, Winchester, Ky.

ASHTABULA COUNTY, Ohio gas and oil land, heart old gas field, Markham gas station, pipe lines. Gas wells on lands adjoining. This sixty-three acres for sale on main paved highway, valued for gas, oil, orchard tract, gentleman's country home. Near college town and county seat. Sixty miles east of Cleveland. Part of "Noble" estate just closing, price $6,500. Address W. D. Port, 10024 Burton Ave, Cleveland, Ohio.

ROYALTIES—in Routt and Moffat Counties, northwestern Colorado. Buy now and get in early on this important field. F. W. Thomas & Co., Mount Harris, Colo.

FOR SALE
One Hundred Forty acres oil and coal land
Gibson County, Princeton, Ind.
Located 2½ miles from Princeton, all under cultivation, good improvements, spring water, wells on farm producing 75 barrels per month, 20 years old—depth 850 to 900 feet—initial production 15 barrels. Plenty of good locations for new wells. Will sell this land including lease of 40 acres adjoining with one well producing, all coal and oil rights included. Price $250 per acre, for the 140 Gas for pumping wells.
Frank M. Harris
Princeton, Indiana

WESTERN KANSAS WILDCATS—Will trade acreage for casing, tools, rigs, 6" Ideal irons, trucks, and for acreage favorably situated near other drilling wells. Our wells on structure which will stand exacting check. Quick action necessary. Box A-422, The Oil and Gas Journal, Tulsa, Okla.

S. E. NEW MEXICO
For sale protection acreage on Manning Dome offsetting holdings of Arkansas Fuel Oil Co. and the Ohio Oil Co. Guaranteed to be on structure. Price $3 to $5 per acre. W. H. McCullough, Roswell. N. M.

OKLAHOMA DRILLING BLOCK
Perfect closed structure, approved leading Oklahoma geologists. Covers large territory. Shallow production. Three sides, oil and gas, extreme edge of structure; 4,000-foot test. Box A-455, The Oil and Gas Journal, Tulsa, Okla.

LEASES—PRODUCTION

GUADALUPE COUNTY LEASES
$3 AN ACRE

Leases between Seguin and Ohio River, in Gudalupe County, Texas, where dozens of the largest companies in the United States hold leases, and where several tests are soon to be drilled, can be had today for $3 an acre. Get particulars.

We also have leases along Marathon Fold and Balcones Fault from 10 cents an acre up. Here are a few of them:

Reagan County	$3.50 an acre
Pecos County	1.00 an acre
Medina County	50c an acre
Crockett County	2.00 an acre
Crane County	1.00 an acre
Gillespie County	10c an acre

30 other counties.

Free map of Texas, showing the Marathon Fold and Balcones Fault is given with each inquiry. Write today for our latest list of bargain leases in Texas and free map. No obligation.

GULF REALTY CO.
291 Bedell Bldg. San Antonio, Texas

DRILLING BLOCK on structure in Western Kansas. Will give 8,000 acres for small bonus and 3,500-foot test. This block near tests being drilled by Amerada, Marland, United and others. Box A-420, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE—Leases close to Marshall-Degenther test, going down on Swanner lease in Franklin County, and near Wood County line. Called Scroggins well. On good structure, defined by reliable geologists, as well as being O. K.'d by Henry Zachary; 5-, 10-, and 25-acre blocks one-half mile to 3 miles, $2 to $25 per acre; well drilling at about 1,700 feet; strong oil and gas showing at about 900 feet. Salesmen wanted. R. W. Dykes, Box 466, Winnsboro, Texas.

TEXAS OIL LEASES in Caldwell and Bastrop Counties comprising 17 separate parcels, aggregating about 2,200 acres for quick sale. Leases four years to run. No reasonable offer refused. These leases situated about 6 to 7 miles from Luling Field. Address, Box A-412, care The Oil and Gas Journal, Tulsa, Okla.

PROSPECTIVE OIL LAND FOR SALE
South half of northwest quarter, Section 13, Township 18n, Range 9e, Creek County, Oklahoma; leased to N. E. Templeman, running about three years. All or any part of fee, less one-half royalty, $20 per acre. Wm. S. Bailey, Jr., 201 Commercial Bldg., Tulsa, Okla.

FOR SALE—New commercial lease on SE quarter of NE quarter, Section 8-8-7, 40 acres in Seminole County. Price $100 per acre for quick sale. Write W. C. Donegan, Amarillo, Texas.

J. F. MARION COMPANY
Magnolia Building
Dallas, Texas
Buys and Sells
Texas and Oklahoma
Producing Royalties
"Ask Us First"

PRODUCTION—Large or small; drilling acreage, leases, royalties. Make specialty of fee acreage. Large acquaintance in Wichita, Clay, Baylor, Archer, and Wilbarger Counties. Stehlik & Baber. Kemp Hotel, Box 467, Wichita Falls, Texas.

FOR SALE—Oil leases and royalties. New developing field. Five wells going down. Kingfisher and Logan Counties. H. M. Godfrey, Crescent, Oklahoma.

25 CENTS per line first insertion; 15c per line each additional insertion. Cash in advance.

CLASSIFIED WANTS

MAIL your advertisement now. It will be published next week. Cash with order.

LEASES—PRODUCTION

ROYALTIES AND LEASES
In Oklahoma for Sale
C. A. LYNCH
607 First Nat'l. Bank Bldg.
Tulsa, Okla.

FOR SALE—At bargain prices, oil and gas leases, production and royalties in the Kentucky shallow fields. For full particulars and maps, address W. P. Harley, Bowling Green, Ky.

SHALLOW FIELDS
Leases in Wichita, Archer, Young, Baylor, Throckmorton, Shackelford and Callahan Counties, Texas. Lowest prices, best locations; near drilling wells. Write for list. P. R. McIntosh, 215 Neil P. Anderson Bldg., Fort Worth, Texas.

MISSISSIPPI next big oil State; 10,000 acres leases, Grenada County, for well; good geology. W. C. Brooks, 282 S. Front St., Memphis, Tenn.

SELL LEASE Oklahoma oil land, near production. Timbered coal section. Belle Clark, 216 De Forest Ave., Bridgeport, Conn.

BUSINESS OPPORTUNITIES
Can get up 25,000 to 50,000 acres of producing oil and gas lease in three of Kentucky's coming oil producing counties—10-year leases, 10-cent rantal—at a cost of 40 cents per acre. For full partiurclers address, Keene Lutes, Danville, Ky.

LEASES AND DRILLING CONTRACTS
Proven acreage close to large producers. Blocks Y and Y-2, Hutchinson County, Texas. R. P. O'Grady, Suite 2, Old Post Office Building, Amarillo, Texas.

CONTRACTORS

C. B. CASENBURG
General Contractor
El Dorado, Kans. Shilder, Okla.
Oil field construction work of all kinds.
Rig Building
Gas Engine Setting
Installation of Powers
All Work Guaranteed
Estimates Sheerfully Given
Write Us

TANK TABLES

GUARANTEED TANK TABLES
Tracings, $2.50 to $5, according to size of tank. White cloth prints, 75c to $1.25 each. Blue prints, 25c to 75c each. Send strapping report and instructions to H. F. Heydrick, 208 South Twelfth St., Muskogee, Okla.

POSITION WANTED

CAN SUPERINTEND many factories. Contractor and builder of carbon black factories, can tell the different grades; have had 20 years' experience. Can look after drilling. Box A-443, The Oil and Gas Journal, Tulsa, Okla.

DRILLING and producing superintendent, several years' rotary and cable tool experience; graduate civil engineer, possessing excellent recommendations and personality desires responsible position. Box A-441, The Oil and Gas Journal, Tulsa, Okla.

WANTED—Position by experienced man for South America or any other country. Many years of experience as drilling and production superintendent in India and Mexico. Speak and write English, Spanish, German, and Dutch. References of highest character. Box A-444, The Oil and Gas Journal, Tulsa, Okla.

LIGHT OIL MAN — Refinery man with 10 years' experience, from loading rack to general superintendent, wants good connection. Practical man. Address Box A-400, care The Oil and Gas Journal, Tulsa, Okla.

POSITION WANTED

ACCOUNTANT with a number of years experience in oil accounting, thoroughly familiar with the producing, refining, pipe lining and selling of oil. Wants to make a connection with an oil company in need of the services of a young man qualified to handle any work that presents itself in an oil office. Box A-437, The Oil and Gas Journal, Tulsa, Okla.

ADVERTISING RATES

The cost of advertising in the Classified Wants Section is very reasonable. It costs 25 cents a line for the first insertion and 15 cents a line for each following insertion. Six words usually make a line. Cash with the order, please.

Us this table to figure the cost of advertising in the Classified Section. Keep it for reference:

	One Time	Two Times	Three Times	One Month
3 lines..	$ .75	$1.20	$1.65	$2.10
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I WOULD like to represent some substantial equipment firm in new Colorado oil fields. Would invest in moderate way if required. Box 1393, Greely, Colo.

HELP WANTED

SUPERINTENDENTS, engineers, executives, now earning $3,000 to $25,000, will find our individual, confidential service a dignified and effective medium to make desired connections. Personally conducted by Mr. Jacob Penn, the eminent employment authority, known to leading business men throughout America. Not employment agency. Inquiries solicited only from persons with records of successful performance and stability. Jacob Penn, Inc., 305 Broadway, New York.

DRILLERS WANTED in Georgia. Have 25,000 acres leased; good proposition. For particulars, address J. M. Windham, Carnesville, Ga.

WANTED—"Live wire" Mid-Continent representative. Prefer engineer or salesman now covering the territory who can handle our attractive proposition with present line. Address Box A-401, care The Oil and Gas Journal, Tulsa, Okla.

AGENTS WANTED

DISTRICT AND LOCAL AGENTS WANTED
To sell our huge stock of
Brass valves—pipe fittings and gauges
Including the following makes
Kelly & Jones Crane
Fairbanks Lunkenheimer
All new merchandise. Buyers realize savings of 20 to 50 per cent. Immediate delivery and satisfaction guaranteed. We sell all Brass Unions cheaper than the ordinary Black Malleable or Galvanized Union.
Write
JONES-McKEE, Inc.
170 Broadway New York, N. Y.

SALES AGENTS wanted to sell our products as a side line to Oil Producers to stop that rot on derrick and other timbers, as many are doing. Liberal commissions. The C-A Co., 6229 Delmar Blvd., St. Louis, Mo.

WANTED

PRODUCING ROYALTIES wanted for cash. Settled production preferred. Give full particulars. Address "Royalty," Beacon, N. Y.

WANT to purchase a Bignall & Keeler pipe machine. Advise size, condition and lowest cash price. Box A-440, The Oil and Gas Journal, Tulsa, Okla.

WANTED

PRODUCING ROYALTIES wanted in Oklahoma. Box A-433, The Oil and Gas Journal, Tulsa, Okla.

WANTED contractor to drill two 900-foot wells in Wyoming. Easy drilling. Have tools, 28 Star rig, furnished camp on lease. References required. Address G. M. Kyle, Burlingame, Cal.

WANTED—If you have money that you want to work for you, investigate my proposition. I have choice block of leases, about 3,000 acres, near other wells drilled and drilling; on good structure; will give interest in all leases and let you use the money to see that it is spent only in drilling, and not for promotion. I hold proof that there is large oil field here. Investigate. R. W. Dykes, Box 406, Winnsboro, Texas.

WANTED to interest capital in a real oil proposition. Write us for information. References, Bradstreets, Banks and Supply Houses. Johnston Drilling Co., Inc., El Dorado, Ark.

WANTED—Producing royalties, Oklahoma and Kansas. Give full details. P. O. Box 502, Independence, Kans.

BUSINESS OPPORTUNITY

FOR SALE
Completely equipped machine shop employing 11 men, near shallow oil field; another now opening; a good paying proposition; 17 years in business; only shop in 50 miles radius; reason for selling, owners going into implement manufacturing business. Cameron Machine Shop, Cameron, Texas.

CORE DRILL your structure with diamond drills and reduce the hazard of wildcatting. Let us help your geologist correlate structure before you put cable tools at work. The cost is relatively small and the possible saving enormous. On well located tracts we will accept acreage in lieu of profits. Drilling Corporation of America, George H. St. Clair, General Manager, 205 Cosden Bldg., Tulsa, Okla. Phone Osage 8183.

FOR SALE—Complete modern skimming plant, 2,500-bbl. capacity on 19.13 acres fee land. Situated on long right of way W. F. & N. W. Railroad, Grandfield, Okla. Will be sold at Sheriff's Sale, Court House, Frederick, Okla., November 6, 1924. For information, write P. O. Box 1893, Tulsa, Okla.

OIL MAN, do you need a telephone at the well you are drilling? We can save you money on the building of your telephone and electric lines. Name the town and distance and we will be glad to submit our estimate on the complete installations. We are equipped and have the experience on telephone, electric and telegraph lines.

OKLAHOMA
HIGH LINE CONSTRUCTION CO.
805 Mayo Bldg.
Tulsa, Okla. Phone Cedar 2551

Form your own company or incorporate with others, and colonize rich low-priced agricultural land in
MEXICO
Investment safe; profit attractive; large capital not necessary. I make the building of a community a success by handling intelligently Agricultural Surveys, Soil Surveys, Production Surveys, Marketing Surveys; Purchasing, Financing and Colonizing Methods; Community Planning and Development Work. Industrial Engineer, Box 1064, El Paso, Texas.

UNUSUAL OPPORTUNITY to acquire interest in manufacturing Patented Bolted Steel Tanks. Demonstrated practical and salable. Box A-451, The Oil and Gas Journal, Tulsa, Okla.

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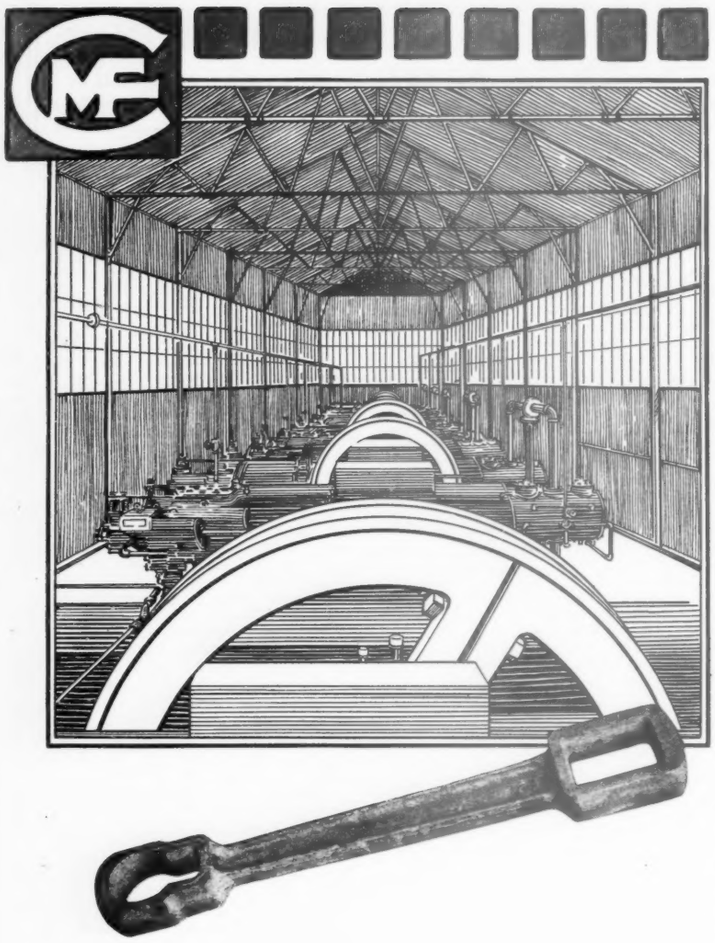
(Additional Classified Wants on Page 101)



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CHAMPION DROP FORGINGS

MEXICAN FIELDS

(Continued from Page 37)

wells finished in the northwest corner of Lot 5 Cacalilao, where it joins Ebano's La Dicha property, are both dry holes. So goes the law of offsets in the northern Mexican fields.

La Corona Petroleum Co. abandoned No. 2 Los Cues, well south of Topila, at 3,000 feet, a junked hole, the drill stopping in the San Felipe with no showing. Mexican Gulf Oil Co. has two failures in the El Barco-Salinas sector, No. 5 Salinas being a duster at 3,305 feet.

In the South Fields, Huasteca Petroleum Co. has a 500-bbl. well in No. 31 Tierra Blanca, completed at a subsea level of 2,507 feet. Penn Mex Fuel Co. drilled into salt water in No. 12 Jardin at 2,362 feet. Mexican Eagle Oil Co. has a dry hole in Lot 260 Amatlan at 1,442 feet, while No. 25 in the old Alazan Pool, north of Potrero del Llano, is also a duster at 2,551 feet.

Decline in Drilling

There is a rather noticeable decline in drilling operations in the Panuco district, some of the major companies considered. To amplify this, La Corona Petroleum Co., which had some 20 strings of tools running two months ago has now seven strings in the Panuco district, and two wildcats. International Petroleum Co. leads in the list of drilling, with 15 strings drilling in the Cacalilao sector of the Panuco field, and four other tests belonging to the wildcat class with the exception of one test drilling in Toteco. Mexican Gulf Oil Co. has dropped to two strings in Panuco, and three wildcats under its own name. Mexican Sinclair Petroleum Corp. has only three strings running. Transcontinental Petroleum Co., in the Cacalilao-Paciencia sectors of the Panuco Field has 16 strings running. In the South Fields, Huasteca Petroleum Co. has 15 strings in operation; and at Ebano, Mexican Petroleum Co., the other Pan-American subsidiary, has 8. By and large, the number of derricks up, or in process of being erected, or strings actually making hole can be summed as follows: South Fields, 35; Panuco district, 63; other miscellaneous northern fields, 42; total, 140. Two months ago this last figure would have read 200.

Is It Corcovado?

Just now interest is being directed to the Corcovada district, which lies northwest of Tortuga and is bounded on its north by the Tamesi River. Two failures have already been drilled there, it is true; but two failures are hardly enough to condemn a sector of its area, and, too, it is likely looking territory on the surface. Both big companies and independents are interested in it and two tests are making hole there now with others getting ready to follow. Tortuga, in which some half-score independents are at work (delayed by rains the past six weeks) has a salt water well already (as previously reported) and it is commencing to look as if it is a failure. Wherefore the turning of expectant eyes to the Corcovado, with its range of low hills, farther northwest.

Meanwhile, actual production, especially in the northern fields, is following the down curve, partly because one big company now has a number of its wells shut in; and insofar as Mexican Petroleum is concerned (Ebano) that company is not running more than one-half of its actual production at present time. In other words it is running around 25,000 bbls. a day. Its sensational well, No. 1 Mendez, rated 30,000 bbls., is not yet connected up as bad roads and worse weather have precluded the movement of the necessary pipe line material, pump station equipment etc. To sum production, if everything was moving, possible production could probably hold its own in the northern fields at around 240,000 bbls. a day, although the actual production right at this time is approximately 175,000 bbls. a day, a decided drop in the past two weeks. The South Fields holds fairly steady at 100,000 bbls. a day.

Field Operations

Drilling operations in the Cacalilao sector of the Panuco Field follow: La Corona Petroleum Co.'s No. 135, Lot 4, drilling in lime at 1,900 feet; No. 140, same, drilling in shale at 600 feet, and No. 142, drilling in the same formation at 595 feet. In Lot 1, Corona's No. 139 is drilling in the San Felipe at 1,125 feet. International Petroleum Co.'s operations in Lot 5 follow: No. 62, cemented 8-inch at 1,202 feet in the San Felipe, and this also applies to No. 66; No. 76, drilling in gray shale at 425 feet; No. 83, drilling in white lime at 2,205 feet; No. 89, drilling in gray lime at 2,089 feet; No. 105, drilling in white lime at 2,30[illegible] feet; No. 107, rigging; No. 110, cemented 8-inch at 1,203 feet in the San Felipe. In Lot 3: No. 108, drilling in gray lime at 1,865 feet; No. 125, cemented 8-inch at 1,025 feet in the San Felipe; Mexican Gulf Oil Co.'s No. 67, Lot 1, drilling in white and brown lime at 1,770 feet; No. 68, drilling in the San Felipe at 1,20[illegible] feet. Mexican Sinclair Petroleum Corp.'s No. 61, Lot 3, drilling in the San Felipe at 1,060 feet, and No. 67, drilling in the same formation at 1,150 feet. Transcontinental Petroleum Co., in Lot 4, is operating as follows: No. 43, drilling in lime at 1,925 feet; No. 92, drilling in shale at 950 feet; No. 100, after showing some 6,000,000 feet of dry gas at 1,40[illegible] feet, drilling in the San Felipe at 1,50[illegible] feet, showing 25 bbls.; its No. 102, drilling in the San Felipe at 1,610 feet; No. 112 cemented 10-inch at 1,400 feet in shale; No. 116, drilling in the San Felipe at 1,660 feet; No. 118, cemented 8-inch in the San Felipe at 1,275 feet. In Lot 5: its No. 126, cemented 12½-inch at 600 feet in shale; No. 127, drilling at 925 feet in shale, and No. 128, spudding. In the Paciencia, just north of Cacalilao, its No. 7 is drilling in the San Felipe at 1,745 feet; No. 13, same, drilling in limestone at 2,135 feet.

Old Sectors

In the older sectors of the Panuco Field, drilling operations, delayed more or less by bad weather and roads, offer the following: East Coast Oil Co.'s No. 18 Estero Grande, drilling in gray lime at 2,155 feet. Its other active tests continue shut down, and it has derricks up for No. 20 Laguna de la Milpa; Potrero del Zacate No. 23, and No. 439 Ingenio. Everything else marks time.

South Fields

In the South Fields, Huasteca Petroleum Co. (Mexican Petroleum) No. 47 Cerro Azul, is drilling in gray lime at 1,986 feet; No. 48, drilling in basalt at 1,181 feet; No. 49, is in the same formation at 336 feet; and Nos. 50, 51 and 54 are derricks. Down in Tierra Blanca, No. 30 is drilling in brown shale at 1,530 feet; No. 32 drilled No. 1,781 feet in gray shale; No. 33 has material on the ground. Up in Tres Hermanos its No. 8 is drilling in the San Felipe at 2,800 feet. Agwi Companies, No. 25 Laguna de Tamiahua, continues shut down at 315 feet in shale; No. 26, cemented 10-inch in the same formation at 1,310 feet. In Chiconcillo, its No. 23, Lot 2 is drilling around 925 feet in shale; and No. 24, same, drilling in the same formation around 1,000 feet. Cortez Oil Corp.'s No. 8 Aguada is swaging casing at 5,000 feet in a limestone. It is intended to send the drill several hundred feet deeper in an attempt to develop the Tamaspo limestone. Hudson and others' No. 1, Lot 5, Metlaltoyuca, is drilling at 225 feet in shale. International Petroleum Co.'s No. 1 Santa Rosalia, is drilling in the San Felipe at 2,839 feet; and No. 48 Toteco, drilling in brown shale at 1,410 feet. Pantepec Petroleum Co., No. 1, Lot 134 Chinampa, has a caving hole at 1,861 feet and is running a 6-inch liner as a result.

Mexican Eagle Oil Co.'s No. 10, Lot 148 Amatlan, is drilling in the San Felipe at 2,132 feet; No. 40, Lot 132 Amatlan, putting on connection at 1,800 feet, preparatory to drilling in. No. 119 Cerro Veijo, drilling in shale at 1,800 feet, and in San Diego, No. 7 running 4-inch drill pipe at 1,462 feet in a gray lime. Norris and others' No. 1, Lot 161 Amatlan, is rigging.

Miscellaneous Tests

In the northern fields the miscellaneous districts have the following: At Ebano, Mexican Petroleum Co.'s No. 48 La Dicha cemented 8-inch in lime at 1,300 feet.

(Continued on Page 112)

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REPUBLIC SUPPLY CO

Oil Securities Active and Higher

Upward Turn Despite Downward Tendency in Other Classes of Stocks. Large Traders Thought to Have Been Switching to Oil

By N. O. Fanning
Room 543, No. 30 Church St., New York

NEW YORK, Oct. 18.—Oil securities were active and higher during the past week. This was in the face of a downward tendency in other classes of stocks, such as steels, equipments and rails. The upward turn in oil securities was attributed to switching on the part of large traders to the oils, which have been neglected for several months.

Although the rise in oil stocks during the week brought rumors of definite improvement in the oil industry, it is pointed out in conservative quarters that the decline in crude production has not gone far enough to allow a withdrawal from crude oil in storage and with gasoline prices at the lowest level in years the oil industry faces the possibility of one of its hardest winters, with public financing on the part of many oil companies probably not far off.

Prior to the beginning of the current activity and strength in oil stocks, this group had declined to an extent which brought The Oil and Gas Journal's index as of October 11 to 45.24, the lowest point of the year. New low prices were established by several issues, including California Petroleum common at 19½, Sinclair Conosildated preferred at 75, Tide Water Oil at 116¼ and Prairie Oil & Gas at 194. On the rebound California Petroleum rose to 21, Sinclair preferred to 81, Tide Water Oil to 118¼ and Prairie Oil & Gas to 206. Issues showing unusual strength included Shell Union Oil common at 18 and Simms Petroleum, which made a new high at 15½.

New Financing

Possibilities of new financing by oil companies was generally talked of in Wall Street, particularly in view of the fact that the Pan American Petroleum & Transport Co. had sold to a group of bankers headed by Blair & Co. an issue of $12,000,000 10-year convertible 6 per cent sinking fund gold bonds. These bonds are issued for the purpose of providing for the prompt redemption of the entire outstanding $7,494,200 Mexican Petroleum Co., Ltd., of Delaware 15-year 8 per cent sinking fund convertible gold bonds and to furnish additional working capital. Approximately 98 per cent of the capital stock of the Mexican Petroleum Co. is owned by Pan American.

The new bonds are convertible into Pan American class "B" common stock at $70 per share, that is, at the rate of $1,400 face amount of bonds for $1,000 par value of said stock (20 shares of $50 par value each) with provision for reduction of the conversion rate if under certain conditions additional common stock of class "B" common stock (other than 200,000 shares and any stock issued in exchange for Mexican Petroleum Co. stock), shall be issued or sold at prices lower than $70 per share.

The company will retire one-tenth of these bonds each year, the first installment to be payable on November 1, 1925; the sinking fund payments to be payable semiannually thereafter on May 1 and November 1. The company is to be credited on its sinking fund obligation with bonds returned by conversions. The company may anticipate its sinking fund installments.

It is understood that the Marland Oil Co. is actively discussing with bankers plans calling for financing involving an amount from $10,000,000 to $15,000,000 in short term notes. The length of the maturity or the rate of interest has not yet been decided upon.

The new funds, it is understood, will be used largely for financing oil now in storage and to be stored during the coming winter months and possibly a part of the proceeds may be utilized in connection with certain important corporate developments which are now pending.

Rockefeller Foundation

The annual report of the Rockefeller Foundation for 1923, just issued, shows some interesting changes in the quantity and value of its securities which were turned over to the Foundation by John D. Rockefeller at the time of its organization. The report shows that all of the Foundation's holdings of the Standard Oil Co. of Kansas, which amounted to 78,624 shares, carried at $17.18 a share, or an aggregate of $1,351,433, had been disposed of during the last year. This block of stock was offered to the public by a local banking firm last year at $40 a share, or $3,144,960. The proceeds, less the bankers' commission, was turned over to the Foundation. Also there were sold 80 shares of Standard Oil of Nebraska, carried on the books at $90 a share, but worth in the open market about three times that amount.

The report revealed that the Foundation had liquidated all of its holdings of Borne & Scrymser stock. The Foundation held only 720 shares of this issue, which were carried on the books at $90 a share, or an aggregate value of $42,480. Also 18,000 shares of Standard Oil of Indiana were disposed of. This stock was carried on the books at $43.35 a share.

Judging from the figures given in the annual report of the Foundation, most of the income received from the sale of stock and part of the other income was used to increase the holdings of United States Government securities, which were given at about $17,000,000 in the 1923 report against $8,000,000 in the 1922 report.

Total holdings of all securities, including stocks and bonds, were valued at $164,812,198 in the 1923 report, comparing with $161,573,215 in 1922. These holdings were divided into bonds valued at $48,111,245 and stock valued at $116,700,952, comparing with $39,629,937 and $121,943,277 respectively in 1922.

The Foundation's largest holdings in any one company is 919,500 shares of common stock of the Standard Oil Co. of New Jersey, carried at 36½ a share, or an aggregate value of $33,538,762; also 55,000 shares of that company's preferred stock, carried at 102⅞ and valued in the aggregate at $5,658,008.

The Foundation's holding of the capital stock of the Continental Can Co. increased fourfold through the exchange of four shares of new stock for one share of the old, making the Foundation's holdings of this stock about 82,000 shares.

In the recent merger of Continental Oil Co. with the Mutual Oil, the Continental stock owned by the Foundation was exchanged for the stock of the Mutual Oil Co., giving the Foundation 320,000 shares of the stock of the Mutual company.

Other changes included an increase in the value of Belgian Government bonds by $170,000. The Foundation's holdings of Anglo-American Oil, the British subsidiary of the Standard Oil organization, were written down from 30.5 to 25.18 a share, giving the 366,517 shares a book value of $9,223,915 in 1923, against $11,178,768 in 1922. The holdings of Northern Pipe Line Co. were marked down from 110 to 95 a share, giving the 9,000 shares a value of $855,000, against $990,000 in the 1922 statement. Crescent Pipe Line holdings of 14,120 shares were written down from 60 to 35, giving an aggregate value of $494,000 against $847,000 in 1922.

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

No.	Stock—	Par	§Dividend Rate	Clos. Quotations Oct 20	Oct. 11	1924 High	1924 Low	1923 High	1923 Low
1.	American Republics	..	..	*36	*35	43	25	..	..
2.	Associated Oil	25	6	28⅞	*28	34⅝	27⅝	29¼	29½
3.	Atlantic Ref., com.	100	..	88	*84	140½	78½	160	98¾
4.	Barnsdall "A"	25	..	*17½	17½	21⅝	14	35	9⅞
5.	California Pet. com.	25	7	21⅝	21⅝	29	21⅝	28½	17½
6.	Cosden & Co. com.	..	..	24⅝	23	40½	23½	62¼	23¾
7.	General Am. Tank.	..	†3	44	*45	49¼	35½	71⅞	40
8.	General Asphalt	100	..	41⅜	40	49	31⅝	64	23
9.	General Petroleum	25	8	41¼	39¾	45	38⅝	..	..
10.	Houston Oil	100	..	69½	67⅝	82½	61	78	40¾
11.	Independent Oil & Gas	10	..	7⅜	6¾	9½	5¾	11¼	3⅜
12.	Indian Refining	10	..	8⅝	*5¼	7	3⅝	8½	4
13.	Invincible Oil	50	..	12⅞	12½	15⅞	11¾	19¼	7⅛
14.	Maracaibo	..	..	26	25½	37½	25⅝	28½	16
15.	Marland	..	..	35	31⅞	42	29	59⅝	18½
16.	Mexican Seaboard	..	..	23½	22⅝	25¾	14½	19⅝	5¾
17.	Middle States Oil	10	..	1½	1⅛	6⅞	1	12¼	3½
18.	National Supply	50	6	55	55	72½	55¼	63	54
19.	Pacific Oil	50	†2	48⅝	46⅝	58¼	45	52½	31½
20.	Pan-American, com.	20	16	51½	51⅝	61¼	44¼	95½	53
21.	Panhandle P. & R.	..	..	2⅝	*1½	4½	1⅝	6¼	1¼
22.	Phillips Petroleum	..	†2	32⅞	29¾	42¼	28½	69⅝	19¾
23.	Producers & Refiners	50	..	26	23⅜	43½	22¾	58⅛	17½
24.	Pure Oil, com.	25	6	23¼	22¼	26⅜	20	32	16¼
25.	Royal Dutch, N. Y. sh.	13.40	2.62	41¾	40⅝	59½	41½	55⅛	40½
26.	Shell Transport	10	x92½	*34½	*35	41½	33	41¼	29½
27.	Shell Union, com.	..	†1	18¼	17	20½	15⅝	19¼	12⅞
28.	Simms Petroleum	10	..	14⅝	14	14⅞	10⅝	16⅜	6½
29.	Sinclair Cons. com.	..	..	17	15½	27½	15	39⅝	16
30.	Skelly Oil	25	..	19⅝	17½	29	17¼	35	12⅛
31.	Standard of California	25	8	57¼	55¾	68½	55⅛	64½	47½
32.	Standard Oil of N. J.	25	4	36	34⅝	42¼	33	44¼	30⅞
33.	Standard of N. J., pfd.	100	7	117¼	117⅜	118⅝	116¾	118½	114¾
34.	Superior Oil	..	..	4⅞	4⅝	8½	2⅝	6¾	2
35.	The Texas Co.	25	12	40¾	38⅞	45⅝	37⅝	52⅞	34⅝
36.	Texas Pac. Coal & Oil	10	..	8½	8½	15¼	8¼	24¾	5½
37.	Tide Water Oil	100	4	*117½	*113	151	118¼	144	94
38.	Transcontinental	..	..	4	4	6¼	3¾	14½	1¼
39.	Union Tank com.	100	5	122	120¼	132⅞	94	114	106
40.	White Eagle Oil & Ref.	..	2¼	25⅞	24	29⅝	23¼	30⅝	20⅛
	Standard Oil Stocks								
41.	Anglo-American Oil	£1	25	15⅝	14⅞	18	14⅜	19¾	13½
42.	Borne Scrymser	100	12	*205	*205	264	150	153	110
43.	Buckeye Pipe Line	50	14	*57	*55	85½	61	94	57½
44.	Chesebrough Mfg., com.	25	14	*48	*48	43¾	29¼	340	205
45.	Continental Oil	25	8	*42	*42	54⅞	42½	50	32½
46.	Crescent Pipe Line	25	..	*11	*11	20	11¼	25	15
47.	Cumberland P. L.	100	10	*138	135	148	109	117	80
48.	Eureka Pipe Line	100	8	*76	*76	105	74	117¼	87
49.	Galena Signal, com.	100	4	*53	*52	69¾	55¼	78	55
50.	Humble Oil & Ref.	25	4.8	36⅝	*35	43¾	36	41	28¼
51.	Illinois Pipe Line	100	12	*120	121½	161	123	171	115
52.	Imperial Oil, Ltd.	25	12	104	110¼	119	99	123	92
53.	Indiana Pipe Line	50	8	70	*70	100	66	103	81
54.	International Pet. Co.	100	x50	19¾	18½	22¼	16⅞	24¾	13¼
55.	Magnolia Pet. Co.	100	4.5	135	128	160	124	166	123
56.	National Transit	12.50	16	*21¾	*21	25⅞	21¼	29	19½
57.	New York Transit	100	10	*55	56½	97	54½	138	70
58.	Northern Pipe Line	100	6	76	*75	107½	73	111	96
59.	Ohio Oil Co.	25	8	61	59¼	79½	58	85¾	48¾
60.	Penn-Mex. Fuel	25	..	33½	*32	45⅝	32½	45	10½
61.	Prairie Oil & Gas	100	8	215½	195	269	194½	272	152
62.	Prairie Pipe Line	100	8	104½	102	111	100	117	93
63.	Solar Refining Co.	100	15	181	*180	225	170	212	161
64.	Southern Pipe Line	100	16	86	81	100	86	116	87
65.	South Penn Oil	100	..	130	*129	176	117	196	100
66.	South West Pa. Line	100	8	*70	*71	89	76½	89	66
67.	Standard of Indiana	25	10	55⅞	55¼	58⅝	54¼	69⅜	49¼
68.	Standard of Kansas	25	..	35	*32	50½	32½	56¼	36½
69.	Standard of Kentucky	25	16	116	*114	120	101	109½	76
70.	Standard of Nebraska	100	20	*231	230½	256½	198	280	186
71.	Standard of New York	25	5.6	40¾	38⅝	48	37⅜	49¾	35½
72.	Standard of Ohio, com.	100	10	*369	302	336	277	320	270
73.	Swan & Finch, com.	100	..	*40	*40	81	24	38	21½
74.	Vacuum Oil	25	12	71¼	70	72¾	56½	55½	40
75.	Washington Oil	10	10	*30	*29½	29	25	28	20½
	Miscellaneous Stocks								
76.	Cities Service, bks. sh.	..	†21	14½	14⅛	16	13¼	18⅛	12¾
77.	Gulf Oil Corp. of Pa.	25	6	61⅝	*59	65	56⅜	68¼	46¾
78.	Mutual Oil	5	10	10⅝	10⅝	14	9⅜	..	..

*Bid, no sales. †In dollars. §The figures in this column are kept up to date as far as possible, but are not guaranteed. xCents per share.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange was as follows:

Oct. 20	46.99	Sept. 15	47.41	Aug. 11	47.48
Oct. 11	45.24	Sept. 8	47.89	Aug. 4	49.71
Oct. 6	46.20	Aug. 30	47.59	July 28	47.86
Sept. 27	46.70	Aug. 25	47.01	July 21	48.28
Sept. 22	47.02	Aug. 18	47.85	July 14	46.96

CALIFORNIA RECEIPTS AND PETROLEUM IMPORTS

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended October 11 totaled 716,000 bbls., a daily average of 102,286 bbls., against 827,000 bbls., a daily average of 118,143 bbls. for the week ended October 4.

At Atlantic Coast Ports—	
Baltimore	94,000
New York	622,000
Total	716,000
Daily average	102,286

Imports of crude and refined oils at the principal ports for the week ended October 11 totaled 1,402,000 bbls., a daily average of 200,286 bbls., compared with 1,271,000 bbls., a daily average of 181,571 bbls. for the week ended October 4.

At Atlantic Coast Ports—	
Baltimore	36,000
Boston	147,000
New York	161,000
Philadelphia	46,000
Others	244,000
Total	633,000
Daily	90,000
At Gulf Coast Ports—	
Galveston district	288,000
New Orleans and Baton Rouge	261,000
Port Arthur and Sabine district	125,000
Tampa	35,000
Total	709,000
Daily average	101,286
At All U. S. Ports—	
Total	1,402,000
Daily average	200,286

Union Oil Co. Team Winner in Safety-First Aid Contest

LOS ANGELES, Cal., Oct. 18—Impetus has been given the promotion of safety measures and first-aid practice in the oil fields as a result of the contest at Riverside, won by the Union Oil team. Much benefit is expected to result from the spreading of greater knowledge of how to care for injured workers.

In competition with 12 expert industrial, municipal and public service first-aid teams at the second California First-Aid Contest, the Union's Los Angeles Refinery team captured not only the special prize for the petroleum industry, and special prize for the best team south of the Tehachepi Range, but in addition received the grand prize as the championship team of the State.

The contest was held at the Southern California Fair at Riverside, under the direction and supervision of the Bureau of Mines, and under the auspices of the Riverside Chamber of Commerce, the Southern California Society of Safety Engineers, the Society of Safety Engineers of California, Los Angeles Chamber of Commerce, Los Angeles Safety Council, and the American Red Cross.

Entered in the contest, in addition to the winning team, were teams from the Standard Oil Co. (Kern River); Standard Oil Co. (Rio Bravo); Shell Co.; Associated Oil Co.; Associated Oil Co. (Coalinga); Gilmore Oil Co.; Fresno Fire Department; Long Beach Life Guard, San Joaquin Light & Power Co., Llewellyn Iron Works; Riverside Portland Cement Co.; Southwestern Portland Cement Co.

The winning team from the Los Angeles Refinery of the Union brought back a beautiful challenge cup, donated by E. W. Bullard, which had been won at the first contest by the Standard Oil Co. team. In addition, the Union boys won a silver cup donated by the Los Angeles Chamber of Commerce and a silver challenge cup donated by Drs. French and Early.

Each individual on the team received a silver medal appropriately engraved and donated by the National Safety Council, a bronze medal donated by the American Red Cross, $25 in gold, and a souvenir leather bill fold.

Each second prize in the main contest went to the Standard Oil Co.'s Kern River team, third prize to the Fresno Fire Department and fourth prize to the Standard Oil Co.'s Rio Bravo team. A special problem in artificial resuscitation was won by the reward team of the Associated Oil Co. The Fresno Fire Department captured the special prize for municipal and public service organizations and the Llewellyn Iron Works took the special prize for manufacturing concerns.

The problems worked by the teams in this contest were prepared personally by Dr. R. Sayers of the United States Bureau of Mines at Washington and were delivered sealed to the captains of the various teams and opened at a given signal.

Union Oil Co.'s prize winning team was trained by William Cereghino, safety and fire inspector at Los Angeles refinery. The team was composed of E. J. Baird (pipe fitter, first class), captain; A. Matheson (tinsmith foreman); R. Carpenter (blacksmith, second class); T. Nicholls (machinist helper); P. S. Vanderburg (skilled laborer); and E. Harvey (pipe fitting's helper); S. Tussey (mechanic's helper), and F. H. Krebs (meter inspector), went with the team to Riverside as alternates.

The Union team was sponsored by the safety board of the company, Ralph J. Reed, chief engineer, chairman; George Prussing, secretary. Other members are E. P. Tallant, R. W. Garman, G. G. Blue, H. J. Sharpe and H. A. Matier.

"NATURAL GASOLINE" IS SUBJECT OF NEW BOOK

"Natural Gasoline," by G. G. Oberfell and R. C. Alden, is regarded as one of the most important recent contributions to the natural gasoline industry. Mr. Oberfell is well known to gasoline manufacturers in all parts of the nation and Mr. Alden is one of the younger scientific men who has developed rapidly. The book contains 600 pages and is the result of practical experience on the part of the authors in addition to several years of experimentation and study of the theories and laws which determine the methods and application of the principles involved in making natural gasoline. The book is filled with illustrations, charts, graphs, forms of gas contracts, cost sheets, various tables and many other interesting and novel features. The book develops the question of natural gasoline in a logical, exhaustive manner, giving technical and scientific laws and facts in a manner easily grasped by the average field man. Part 1 is devoted to methods of testing gas, gasoline and oil. Part 2 is given over to the design and operation of gasoline plants including a discussion of the charcoal method along with other processes. Part 3 gives the properties of natural gasoline. Part 4 contains miscellaneous tables, graphs and charts and a bibliography of approximately 350 references pertaining to the natural gasoline industry.

PENNOK OIL CORP

NEW YORK, Oct. 18.—A special meeting of Pennok Oil Co. stockholders ratified the plan for liquidation and dissolution on Wednesday, there being represented by person and proxy 83 per cent of the 450,000 shares outstanding. The plan calls for purchase of 150,000 shares at $1 a share, of no par stock of Pennok Oil Corp., a new company, and payment of this stock as a liquidating dividend to old company holders at rate of one new company share for three old company shares. The physical properties of the old company are to be sold to the new company for $2,250,000 three year 6 per cent notes. These notes are to be distributed to old company holders, equal to $5 par of notes for each share of old company stock. In addition, old company shareholders will receive disbursement amounting to about $8 a share in final liquidation.

NEED SELF-RESTRAINT, W. N. DAVIS' WARNING

William N. Davis, president of the Mid-Continent Oil & Gas Association, commenting on the present condition of the oil industry, said:

"The patient's temperature has dropped from 106 to 105.9. The oil industry is still critically and dangerously ill and will not be really well until stocks of crude have been reduced at least 200,000,000 bbls. and stocks of gasoline at least 20,000,000 bbls. A reduction of 200,000,000 bbls. would require a daily draft on stocks of approximately 300,000 bbls. for two years and we are still increasing stocks. Since the peak of gasoline stocks last spring with 39,000,000 bbls. on hand, they have been reduced about 10,000,000 bbls. We are about to enter the season of accumulation of stocks and, if refiners do not curtail their production of gasoline, we will, instead of reducing the excessive stocks 20,000,000 bbls., reach a still higher peak than ever next spring.

"There is real danger that the action of the Prairie Oil & Gas Co. in offering to pay for storage and pay in full for future runs, coupled with the decline in production which has taken place in the last six weeks will be construed as an assurance of complete recovery and normal prosperity in the industry early in 1925, whereas only the exercise of the utmost conservation and self-restraint for many months to come can restore normal prosperity to the oil industry by the spring of 1926."

NEW YORK OPERATIONS

BOLIVAR, N. Y., Oct. 18.—The American Glycerine Co., not a well for Jordan & Co. at Andover. Leon J. MacDonell has completed a good oil well on the Scott farm, town of Bolivar. The Empire Gas Co. Tuesday completed a good well on the Reed farm, town of Bolivar. The Last Oil Co., in which Turner Brothers of Bolivar are interested, has a rig up for a well on the Munger farm, Jordan Hill. Contractor F. J. Woodard has completed a good gasser for the Producers' Gas Co. on its fee property in the South Bolivar district. Contractor Harry Hockenberry has just finished a good well on the Reed farm, town of Wirt. It is No. 23. M. B. Moore has finished a good oil producer on the Paynter farm, town of Bolivar.

THE LULING FIELD IN SOUTHWEST TEXAS

—Photo by courtesy Gulf Royalty & Production Co.

View of the Guadalupe County side of the Luling Field from an airplane, with the San Marcos River and derricks on the Caldwell County side in the distance. The leases plainly shown are the Marines on which the extension discovery well is located, the Allen, Roberts, Harris and Barker tracts. The latter borders the river banks. The town of Gander Slue is to the right, with the dehydrating plants of the United North and South Oil Co. near the fringe of woods. The view illustrates how narrow is the Luling structure, as it extends from the northeast in Caldwell County to the southwest in Guadalupe County. The United North and South and other companies are now drilling offsets one location west from the last row of derricks on the left.

WELL MAKING 20,000 FOR TRANSCONTINENTAL

TAMPICO, Mexico, Oct. 18.—Transcontinental Petroleum Co. has scored a 20,000-bbl. well in its No. 13 Paciencia, just north of the Cacalilao sector of the Panuco Field. The only well drilled in this extensive lease heretofore that is worth remembering was No. 6, completed last July for 1,000 bbls. Three holes there have been failures, and yet another was only a small well. High gas pressure is a characteristic, but in this it does not differ materially from some other of the Cacalilao tests. North of this Paciencia are the extensive holdings of Chapacao, property of Mexican Petroleum Co.

The No. 13 was finished at 2,230 feet, a little deeper than the two other smaller producers already finished.

CLASSIFIED WANTS

CHEMISTS

CHICAGO, ILL.—Benedict Laboratories, Ruprecht Bldg. Consulting and analytical chemists, specialists in cutting, lubricating, tanners, tempering and transmission oils and greases.

MAIL LISTS

FOR SALE

145 names, lease buyers, including largest oil companies and individual producers in Tulsa, 5 cents per name. Guaranteed. The Oil Industry Register, P. O. Box 1742. Tulsa, Okla.

HARD HITTING Clean Cut Sales Letters, Booklets, Folders, Newspaper and Magazine campaigns prepared by Callahan and Staff, 6034 Hollywood Blvd., Hollywood, California, produce results.

INCORPORATIONS

DELAWARE incorporator. Charters, fees small, forms. Charles G. Guyer, 901 Orange St., Wilmington, Del.

FOR SALE—MAPS

MAPS

County Maps of Reagan, Upton, Glasscock, Sterling, in section and ownership. These maps are up to date with all wells showing status at time of mailing. Major lease holdings will be placed on in colors for additional charge. Scale: 1 inch = 1 mile. Address "Maps," Box 46, Big Lake, Texas.

FREE

Geological Oil Map of the new San Jaun Basin Oil Fields of New Mexico. Shows producing areas on Indian Reservation. Structure contours—coal areas—gas fields—drilling wells, etc. Sells locally for $1, sent absolutely free to Journal readers. Write for it today.
Oil Exchange and Board of Trade
Farmington, New Mexico

TOO LATE TO CLASSIFY

PRODUCTION FOR SALE at bargain prices, in the Moran shallow oil field. Address W. F. Powell, Box 537, Moran, Texas.

FOR SALE—10-acre oil lease east of Smackover, same township, price $10 per acre. Write owner, Box 32, Little Rock, Ark.

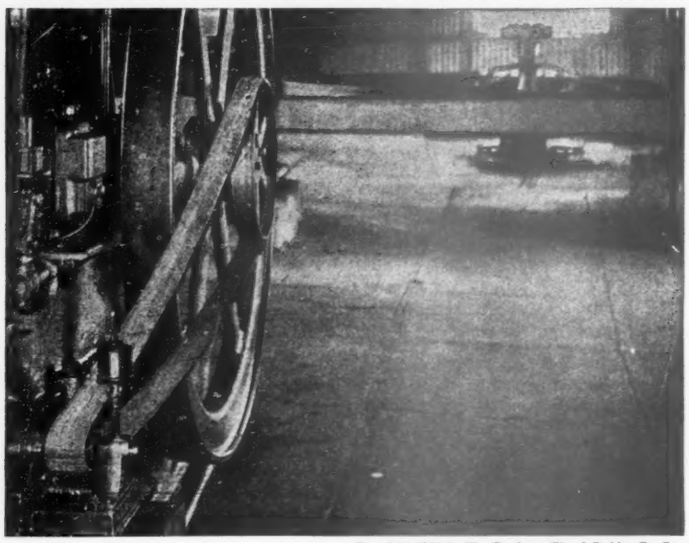
FOR SALE—40 acres of land in South Arkansas oil belt, east of the El Dorado-Smackover Field, very fertile; some improvements. For particulars, write Owner, Box 32, Little Rock, Ark.

WANTED by experienced man, position as overseer, producing properties or drilling wells, salary or salary and interest; references; confidential. "Reldas," 317 Elmira, Muskogee, Okla.

POSITION WANTED—Refinery superintendent; 18 years' experience; will go anywhere. Address Box A-410, care The Oil and Gas Journal. Tlusa, Okla.

EXPERIENCED ROTARY driller and familiar with core barrel work, with several years experience in fields of States and have had some experience in foreign work. Would like work either domestic or foreign. Can furnish good references. Box A-434, The Oil and Gas Journal, Tulsa, Okla.

GOODYEAR MEANS GOOD WEAR



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GOODYEAR

ATLANTIC COAST CONSUMERS DEPEND MAINLY ON TANKERS FOR THEIR SUPPLY

B. N. O. Fanning

NEW YORK, Oct. 20.—Consumption of oil in the States east of the Rocky Mountains can be estimated at approximately 650,000 bbls. daily so far this year, based on the movement of oil into these States as near as this movement can be traced.

The movement can be divided as follows:

Crude Oil	Bbls. daily
By tanker	321,000
By pipe line	150,000
Refined Oil	
By tanker	174,000
By tank car	5,000
Total	
By tanker	495,000
By pipe line	150,000
By tank car	5,000
	650,000

These figures are arrived at by following the movement of incoming tankers, and by using the opinions of pipe line and tank car experts as to the amount of crude and refined oil actually moving to the Atlantic Coast States from outside sources.

Refining capacity in the Atlantic Coast States aggregates 587,750 bbls. daily. This is naturally the maximum capacity; actual runs are doubtless considerably below this average. An estimate based on incoming crude oil would place the actual oil run at 471,000 bbls. daily. The United States Bureau of Mines reports total oils run to stills in the Atlantic Coast and Appalachian refining districts, combined, for July, 1924, at 14,236,000 bbls., or approximately 460,000 bbls. daily, which closely bears out that figure.

Based on the foregoing figures, consumers of oil in the Atlantic Coast area are largely dependent upon tankers, which bring to them 76.1 per cent of their oil either in crude or refined form by water from the Gulf Coast, Pacific Coast or from Mexico, Venezuela and Peru The pipe line system connecting with eastern refineries carries about 23 per cent and tank cars nine-tenths of 1 per cent. In the early days of the oil industry all the oil was brought from western Pennsylvania in pipe lines or by rail; the change in sources of crude brought with it the necessity of transporting oil thousands of miles, and the tanker has proved the most economical method of carrying oil long distances.

Competition With Refiners

Based on the incoming crude movement, refineries in the Atlantic Coast area supply about 72.4 per cent of the oil consumed in that area or exported. That these refiners have stiff competition is shown by the fact that 27.6 per cent of the petroleum products consumed comes from outside refineries, largely in the Southwest or Mexico.

However, looking at it from the other side, the figures show that local refiners have the upper hand, due most likely to economic causes. Few companies have been able to compete with Atlantic Coast refiners in this market except those able to invade it by means of oil tankers. For this reason, the oil tank steamer can safely be guarded as one of the greatest assets an oil company wishing to market on the Atlantic Seaboard can have. The tank steamer has successfully overcome the pipe line in long distance transportation of crude and the tank car in the long distance transportation of refined oil products.

It is safe to say that the bulk of the refined products imported into the Atlantic Seaboard territory are the output of refineries on the Gulf Coast, while some additional supplies comes from refineries in Mexico and on the Pacific Coast. The inland movement of refined products from the Southwest to the Atlantic Seaboard is negligible. A tank steamer can carry 70,000 to 140,000 bbls. of oil in one trip, while a 10-car train of tank cars in one trip cannot carry much more than 100,000 gallons, or about 2,500 bbls.

The Atlantic Coast markets are therefore, because of economic advantages, dominated by local refiners or refineries operating on the Gulf Coast.

Tankers carrying 174,000 bbls. of refined oil daily to the Atlantic Seaboard account for about 97.2 per cent of the refined oil marketed in this territory from the production of local refineries. This percentage is convincing. The following table gives an estimate of the source of oil consumed here:

	Bbls. Daily	Per.
Local refineries	471,000	72.1
*Outside refineries	174,000	26.7
Outside refineries, tank car	5,000	.8

*Brought in by tank steamers.

Oil Sources

This year approximately 54 per cent of the oil consumed here was brought in in the form of crude or refined oil from the Southwest. About 20 per cent came from the Pacific Coast; about 15 per cent came from the fields east of the Mississippi and about 11 per cent was imported, largely from Mexico. From this it will be noted that the Pacific Coast ranked second in importance in the Atlantic Coast situation.

The factor which has made this possible is again that of cheap tanker transportation. The latter will also make practicable the bringing in of large quantities of crude and refined oil from northern South America at some future date, as such countries as Colombia and Venezuela are much nearer the Atlantic Seaboard than the Pacific Coast.

Leading Marketers

It is not hard to determine the chief factors in the Atlantic Seaboard oil market, nor is it difficult to see why these concerns are the leading factors. There are comparatively few refineries on the Atlantic Seaboard, but most of them are large ones, notably those of the Standard Oil Co. of New Jersey, Standard Oil Co. of New York, Tide Water Oil Co. and Atlantic Refining Co. There are others of little less importance than those of the companies named. The second largest source of refined products, it was stated above, is that of the refiners on the Gulf Coast of the United States, notably Standard Oil Co. of Louisiana (a subsidiary of the Standard Oil Co. of New Jersey), the Magnolia Petroleum Co. (a subsidiary of the Standard Oil Co. of New York), the Gulf Refining Co., the Pan-American Petroleum & Transport Co., The Texas Co. and the Humble Oil & Refining Co., (also a Standard of New Jersey subsidiary).

A study of the tanker movement during September, 1924, affords an estimate of the amount of oil brought to the Atlantic Seaboard in tankers owned by the various companies, although in some cases the oil is for the account of others. Estimates are based on capacity of incoming vessels:

	Total Bbls.	Daily Average
Standard of N. J.	3,712,000	123,000
Pan-American Pet.	1,142,000	38,000
Gulf Refining	1,326,000	44,000
The Texas Co.	1,089,000	36,000
Atlantic Refining	848,000	28,000
Atlantic Gulf Oil Corp.	571,000	19,000
Standard of N. Y.	554,000	18,000
Sun Oil Co.	596,000	19,000
Vacuum Oil	587,000	19,000
U. S. Shipping Board	366,000	12,000
Malston Co.	518,000	17,000
Miscellaneous	3,124,000	103,000
Total	14,374,000	478,000

The September movement also gives a line on the sources of the crude and refined oil represented in the above table, as follows:

	Total	Daily
Baton Rouge area	1,897,000	61,000
Port Arthur area	3,854,000	128,000
Texas City area	2,471,000	81,000
Pacific Coast	3,105,000	104,000
Mexico	2,718,000	90,000
Venezuela, Trinidad, Peru	329,000	11,000

The September receipts, 475,000 bbls. daily, compare with a high mark of 571,000 bbls. daily in June, and a low of 361,000 bbls. daily in January, last.

Atlantic Coast Area Large

The Atlantic Coast area—that is the States east of the Appalachian Range—comprises the largest consuming area in

(Continued on Page 111)

The Cross Cracking Process

Pressure Distillate and First Cost—Any Cracking System producing Pressure Distillate is installed with a high first cost, because you have to provide rerunning capacity and tankage to handle it.

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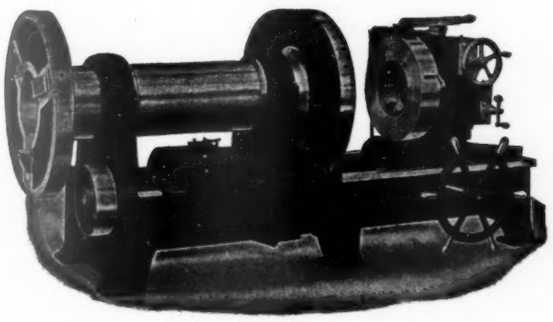

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Edwardsville, Illinois

Gas Salesmanship Discussed Before American Gas Assn.

ATLANTIC CITY, Oct. 18.—More than 4,000 delegates, representing nearly 800 gas companies and appliance manufacturers in every State, attended the sixth annual convention of the American Gas Association here. The deliberations interest more than 45,000,000 customers and 500,000 investors in gas company securities.

Gas as the heating fuel of the future was the dominating note of the program. High pressure distribution, linking the gas industry with the giant power movement; customer ownership, through investment in public service securities; house heating by gas, safeguarding the public through standardization of gas appliances, industrial heating as the incentive for the creation of a new gas industry, the right of a public utility concern to advertise, and public relations problems were discussed.

Among the papers read was one by Thomas F. Kennedy, of H. L. Doherty & Co., in part as follows:

"Most operators of gas companies will agree that even through large expenditures of money, it is impossible to double the earnings of a gas company; but they will agree it is possible to double the earnings of a gas company by developing through sales the market for its product.

"The per capita use of electricity in the United States is approximately five times that of Great Britain, and the United States leads the world in the production and use of electrical energy. The American consumption of electricity per capita a year would never have been 500 to 700 kilowatt hours if it had been left to the customers to go out and buy it. It might be interesting to compare the growth of the gas industry with the electric industry. During the nine-year period, 1914 to 1923, the sale of gas in this country increased 100 per cent. while the increase in electric energy sales was 350 per cent. This, I believe, has largely resulted from the vigorous and aggressive selling and sales policies of the electric industry.

"The usual error of most gas companies has been trying to get a man too cheap. The cheap man is soon replaced by another of the same caliber who lingers no longer. If we employ a cheap man, we can expect nothing but cheap results.

"Many companies make the mistake, I believe, in attempting to lay down the policy that the new business or sales department should operate at a merchandise profit or at least be self supporting after paying all the sales promotion expenses. The fundamental purpose of the sales of new business department is to increase the gross revenue of the company. It is not practical to operate a sales department, in our industry, like a department store because our objective and point of view are not the same. They are working merely for merchandise profit, while we are struggling to increase revenue as expeditiously as possible. Through a proper compensation plan for salesmen and aggressive policies, revenues can be increased more in one or two years than can be accomplished in four or five years by the usual methods employed. These results can be attained by an intensive selling activity, concentrating the efforts on those commodities and those ways and means that produce the most revenue from selling and attaching a gas appliance, to the setting of a meter. The object is to see that each customer receives the utmost in gas service. It is not easy to raise customers bills. You have to sell them appliances, convenience, and in fact, indirectly, the gas bill. The attitude is sometimes taken that if the sales department shows a deficit it is not a success or is poorly managed. The true measure of the money spent in the sales or new business department is the increased gross revenue produced and the improvement in public relations.

"Our gas company representative works on a drawing account or a minimum guarantee, and in addition to a merchandise commission he receives a commission on the increased gross gas revenue from his territory, also some liberal commissions for new customers secured from dead gas service and new houses on mains without gas service and a commission for the sale of a new gas service. By introducing the feature of having the salesmen participate in the company's increased gas revenues, we are providing an additional incentive for him to work along the lines that he has heretofore not been interested in and neglected.

"We in the gas industry are facing ever increasing competition from those aggressive organizations selling electric ranges, oil stoves, etc.; competition in the heating line by the oil burner people selling house heating and industrial equipment, the educational programs of the coal fraternity in improved burning of coal, etc. Due to this competition selling costs will go higher, and if we are to keep going ahead and at a faster pace in the development of the gas business, it is necessary to have keenly alive and well managed sales organizations, and above all, well paid. If those who have control of the policies of a gas company do not recognize this and act, they will find their business in the future reach a point of stagnation and then deterioration. Competition will have your best salesmen as they readily see merchandising possibilities.

"In the last couple of years we have seen the trend of the utility business in consolidations, the merging of smaller companies and groups of companies into big organizations. It will be ever more so. I look to see the adoption of the chain store methods in operating the scattered companies of the big utility syndicates, that is, mass buying and mass selling. Through chain store methods and better values of the gas company merchandisers will be a drawing power that will win the people. That is all within the bounds of possibility, and the opportunity of lessening distribution costs and passing the savings on to the consumer is very real and very great."

Additional Winners Are Announced for Exhibitors' Prizes

Additional winners of prizes offered by exhibitors at the International Petroleum Exposition through the registration plan conducted by The Oil and Gas Journal, are announced as follows:

Frick-Reid Supply Co.

00779 W. W. Lobaugh, driller, Carter Oil Co., Tulsa, Okla.

04420 O. C. Elliott, Wilson Oil Tool Corp., Tulsa.

01502 Arthur Sutton, production superintendent, Laurel Oil & Gas Co., Tulsa.

02162 J. P. Neilson, superintendent, McGraw, Baughman & Bearley Co., Tulsa.

Bartlesdell Refining Co.

03228 L. B. George, traffic manager, Oklahoma Natural Gas Co., Tulsa.

Progressive Brass Manufacturing Co.

00583 Fay Walters, Oklahoma Natural Gas Co., Tulsa.

Norris Brothers.

02086 H. F. Brodkin, casing pulley contractor.

Holders of the following numbers should notify The Oil and Gas Journal at once to receive prizes:

02687
12928
04164
00783
11545
10145
08515

Mexican Agreement On Oil Legislation Reported Reached

NEW YORK, Oct. 18.—"An agreement has been reached on the fundamental points in the long-standing controversy between the oil companies and the Government, says a Mexican Treasury Department statement issued at the conclusion of the conferences between high Government officials and the special committee of the Association of Producers of Petroleum in Mexico which has been in Mexico City since September 17.

The committee, consisting of Chester Swain, counsel for the Standard Oil Co. of New Jersey; General Avery Andrews, American representative of the Royal Dutch-Shell, and Dean Emery, counsel for the Pan-American Petroleum & Transport Co. has let for New York. The official Mexican statement says:

"The conferences between the Mexican Finance Minister, the Under Secretary of Industry and Commerce, other officials and the committee of oil men ended today. They were carried on in an atmosphere of frankness, cordiality and good will, and as the result of such favorable conditions an agreement has been reached on the fundamental points in the long-standing controversy between the oil companies and the Government, harmonizing for mutual benefit the interests of the companies and the rights of the Government, and establishing, according to belief of both parties, a basis for the future development of the Mexican oil industry. The basis reached must naturally be submitted to the President of the Republic and the oil companies."

While the committee adhered throughout the negotiations to the agreement reached between the United States and Mexico during last year's pre-recognition conferences, the fact that the United States at that time reserved American oil rights involved gave considerable scope for negotiation during the conference.

While there has been received here no confirmation of the agreement reported to have been reached between the Mexican Government and producers of oil in Mexico, if it should prove satisfactory to the producers it will mean eventually the entire revivification of the petroleum industry in Mexico through the investing of additional capital, by which new fields long awaiting exploration and development can be opened up. This was the opinion expressed by men high in oil circles and close to the Mexican end of the industry.

The fact that the bases of agreement reported to have been reached will first have to be submitted to President Obregon and then to the oil companies for their formal consideration, will not, it is believed, erect any obstacles to the carrying out of the terms of that agreement.

The production of petroleum in Mexico last year was about 150,000,000 bbls., or an average of 12,500,000 bbls. a month. So far this year it is running at the rate of about 9,000,000 bbls. a month. If it continues at this rate through the remainder of the year the entire year's output will be less than 100,000,000 bbls., but it is expected that the last quarter will show a relative increase. At the present rate, however, production is no greater than in 1917 or 1916.

MONTANA OPERATIONS BECOMING MORE ACTIVE

SHELBY, Mont., Oct. 20.—With four new wells starting during the past week and with 36 rigs working, the fields of Montana are keeping abreast of development work in other parts of the country. Much of the drilling under way now is being done for the purpose of keeping the acreage, as several of the larger concerns, such as the Ohio Oil Co., Carter Oil Co., the California Co., and others, have done but little real development work during the past year, preferring to hold their acreage for the present. It is anticipated that these larger concerns will be forced to put up an active campaign in 1925 to hold their large blocks.

Among the wells started within the past week were the following: The Adams Co.'s No. 1 Shuster, SW cor. NW, Section 32 25-1w, drilling at 100 feet; Big West Oil Co.'s No. 3 Allen, NE cor. SE NE, Section 31-35-1w, drilling at 150 feet; Crumley & McKnight's No. 1 Corey, in the NE SW, Section 4-34-2w; and Moffatt and others' No. 1 Houston Permit, N half NE NE, Section 27-30-3w, 50 feet.

The Sylvester Oil Co.'s No. 3 Anderson, NE cor. NE SW, Section 29-35-1w, got the top of the Ellis sand at 1,477 feet and drilled to a total depth of 1,537 feet. Three pay streaks were encountered, the second of which was the largest. The oil rose 900 feet in the hole and is considered a good well. The Sunburst sand at 1,245-65 feet contained a little gas.

The Sunburst Producing Co.'s No. 2 Hagerty, SW cor. SE SE, Section 14-35-2w, got the first show of oil at 1,448-50 feet, with black lime to 1,460 feet and sandy lime 1,460-66 feet from which oil rose 500 feet in the hole. White lime was encountered at 1,466-69 feet and oil rose to within 400 feet of the top of the hole after standing 24 hours. Tubing will be run and the well tested.

Securities Oil Co.'s No. 4 Stannard, SE cor. SW NW, Section 30-35-1w, got 25 feet of oil in the hole at 1,450 feet and was drilling ahead at 1,495 feet. At 1,493 feet the drill hit a soft spot in the black limey shale and the oil rose about 700 feet in the hole. It may be shot.

The Homestake Exploration Co.'s No. 3 Reibe, NW cor. NW NE, Section 4-35-2w, got top of Sunburst sand at 1,521 feet and at 1,537 feet oil was standing 800 feet in the hole, showing for a fine well.

COASTAL REFINED MARKET SHOWS MORE STRENGTH

HOUSTON, Tex., Oct. 20.—The Houston refined oil market materially strengthened during the week just closed, practically all grades of lubs registering ½-cent advance. Gas oil, too, moved up ¼ to ½ cent. Fuel oil remained stationary although in good demand.

"Strong as horse radish," is the way one refiner characterized the market situation. The change in crude, a decline in daily average output pepped the market considerably.

One refiner in the East wired that the Eastern market was much stronger. This, coupled with an increasing flood of inquiries and a handsome increase in orders, accounts for the optimistic tone displayed by the refiners in talking of market conditions.

One refiner reports that for the last 30 days he has been receiving from two to three car load orders that he is unable to fill immediately and many orders are being booked subject to two to three weeks delay. Then, too, the scarcity of compartment (tank) cars further aggravates the situation and the result is that jobbers are ready to accept spot quotations with more promptitude than displayed for some time. The 200 and 300 viscosity reds are about the only oils that can be shipped without delay.

Gas oils, with lubs, moved up practically ½ cent, now being quoted at 4½ to 5 cents the gallon. Some refiners are sold up and would be willing to buy from other refiners to meet their needs if gas oil was obtainable.

Fuel oil holds steady at $1.50 to $1.60 a barrel with a good demand and not much of a surplus stock on hand.

DRILLING IN HOLLAND

With regard to the discovery oil well at Corle-Winterswijk, Holland, the Netherlands Government has decided to withdraw from responsibility for it, and the Dutch Co. for Undertaking Mining Works has determined to drill in the neighborhood on its own account, with Government permission. That company has already drilled a borehole to 100 meters, and a second is rigging up. These are situate in the area between Lichtenvoorde and Groenlo.

Late News From the Fields

OKLAHOMA

The outstanding development in the Tonkawa Field since the water intrusion became threatening in a couple of wells was the deepening of the Wentz Oil Corp.'s No. 29 McKee, SE cor. SW, Section 34-25-1w. This well made 215 bbls. Saturday from sand at 4,310-19 feet and when drilled to 4,321 feet increased to 1,513 bbls. Sunday and 2,621 bbls. Monday. Wentz Oil Corp. was rigging up its No. 48 McKee, CNL SW, same section, and was building a rig for No. 49 McKee, SW cor. NE SW, same section. No. 18 McKee has been deepened to 4,216 feet, making 2,691 bbls. and No. 45 McKee to 4,180 feet, making 5,241 bbls. Monday. Total depth of T. B. Slick's No. 6-E L. Endicott, in Section 35-25-1w, is 4,062 feet, output increasing to 2,000 bbls. and No. 7-E has total depth of 4,056 feet, with 4,500 bbls. production. The Comar Oil Co. was drilling below 775 feet in No. 7-W Beverlin, CSL NW, Section 34-25-1w.

The Sinclair Oil & Gas Co.'s No. 1 Yarbola, NW cor. NE SE, Section 22-12-9, Okfuskee County, which was reported last week as having a good oil showing, drilled into water at 3,788-90 feet, and had 800 feet of water in the hole.

The Tidal Oil Co.'s well in Section 14-10-8, Okfuskee County side of Cromwell Field, was holding up above the 100-bbl.-an-hour mark on Tuesday morning, the gauge for the previous 24 hours having been 2,482 bbls., 60 bbls. higher than Monday's gauge.

The Sinclair Oil & Gas Co. and Transcontinental Oil Co.'s No. 3 C SE NW SW, Section 9-10-8, extended the Cromwell producing area when it topped sand at 3,440 feet and started making oil. With the bit 40 feet in and still going, the best 24 hours' production was gauged Monday morning when it was 2,197 bbls. The interest in this well arises from the fact that the Carter Oil Co and Gardner Petroleum Co.'s No. 5, which offsets it to the east went through the sand at 3,490 feet and found only a 30-bbl. output.

The Carter Oil Co. and Lorraine Petroleum Co.'s No. 1 Hall, SE cor. NW, Section 16-10-8, found the top of sand low at 3,510 feet, with no show as yet.

The Sinclair Oil & Gas Co.'s No. 3 David Hill, SW cor. NE NE, Section 9-10-8, was estimated to be making 125,000,000 feet of gas at 3,345-3,431 feet and was spraying about 200 bbls. of oil daily.

North of Okemah in northern Okfuskee County, the Independent Oil & Gas Co.'s No. 1, SW cor. NW SW, Section 21-13-9, topped a sand carrying a show of oil at 3,275 feet and was running the 5-inch.

In the Tuskegee Pool, southern Creek County, the Cosden Oil & Gas Co. got a good well in its No. 2 Mitchell, on the east side of the pool, NW cor. SW SW, Section 32-14-10. It made 400 bbls. natural from sand at 3,411-20 feet.

In the Burbank Field, the Phillips Petroleum Co.'s No. 10, C SE NW NE, Section 14-27-5, was good for 100 bbls. after a 90-quart shot in sand at 2,995-3,030 feet. The same company's No. 14, CNL NE NW NE, same section, was a 10-bbl. well after a shot of 60 quarts in sand at 3,034-63 feet.

George S. Bole abandoned his No. 6 Gaston, C NW SE NW, Section 4-27-5, as a failure at 2,988 feet. Sandy shale at 2,910-30 feet was dry.

The Carter Oil Co.'s No. 6 Bighorse, C NW SE NE, Section 13-27-5, was shot with 120 quarts and reopened with 480 bbls. of oil. Sand was reached at 2,940 feet, and oil at 2,948-3,003 feet, with bottom of hole 2 feet deeper. The same company's No. 3, CSL SW SE NW, Section 13-27-5, topped sand at 2,940 feet and found oil at 2,950 feet. Total depth was 3,022 feet and after a 120-quart shot it made 150 bbls. The Phillips Petroleum Co.'s No. 7, C NW SE NE, Section 14-27-5, topped sand at 3,020 feet to 3,063 feet. A 110-quart shot made a 50-bbl. well. Total depth was 3 feet deeper. The same company's No. 8, CEL NE SE NE, same section, was good for 75 bbls. after a shot of 110 quarts in sand at 2,992-3,042 feet.

In Pawnee County, Miller & Gowland abandoned their No. 1, NE cor. Section 18-20-7, as dry at 3,307 feet. Privett & Sloan had a showing for 55 bbls. in their No. 1 Jackson, SE cor. SW NE, Section 16-20-6, in oil sand at 3,050-82 feet. The Cosden Oil & Gas Co.'s No. 4 Schoolland, NW cor. Section 16-20-7, made 119 bbls. after shots of 5 and 10 quarts in sand at 2,592-2,609 feet. Ed Reese and others shot their No. 2 Van Eman, CSL NE NE, Section 17-20-7, with 60 quarts in sand at 2,640-67 feet, making 285 bbls.

Osage County

In Osage County, A. D. Simons found the Peru sand at 884-907 feet dry in its No. 1, SE cor. NW, Section 31-29-12, and was drilling at 1,014 feet.

The Erton Oil & Investment Co. shot its No. 12, CNL NE NE, Section 23-22-10, with 120 quarts in the Bartlesville sand at 1,701-44 feet and the result was 15 bbls.

The Sand Springs Home's No. 5, CSL SW SE, Section 21-20-11, made 30 bbls. the first hour from sand at 2,343-95 feet. The company had timbers on the ground for its No. 2, SW cor. NE, Section 29-20-11.

The Oklahoma Natural Gas Co. topped the Bartlesville sand at 1,488 feet finding 5,000,000 feet of gas and at 1,508 feet shut in its No. 644, CWL NW NE NW, Section 32-21-12.

In Payne County, the Home Gas Co.'s No. 1-A Ellis, NW cor. SW NW, Section 1-18-5, was good for 17,000,000 feet of gas in sand at 1,308-40 feet.

In northwestern Creek County, the Kiskaddon Oil Co. abandoned its No. 1 Foster, NE cor. NW NW, Section 26-19-8, an old well drilled deeper, at 3,288 feet.

Near Sapulpa in northeastern Creek County, the Elro Oil Co. rigged up and shut down its No. 1 Hays, SW cor. Section 6-18-11.

In southwestern Tulsa County, Peterson and others shut in their No. 1 Rhodes, C NW SE, Section 11-17-12, for 1,000,000 feet of gas in sand at 723-53 feet. The Bradstreet Oil Co. was drilling at 400 feet in its No. 1 Boling, SW cor. Section 27-17-12.

The Broken Arrow Gas Co. was drilling at 500 feet in its No. 1 Atkins, CEL NW NW SW, Section 14-18-14. Green and others were rigging up tools for their No. 1 Harmon, CNL NW NE, Section 26-18-14.

A. J. Pettit and others shot their No. 1 Childers, CSL NE NW, Section 10-17-14, with 30 and 40 quarts in sand at 1,098-1,108 feet and it made 5 bbls. afterward. Total depth was 1,500 feet. Maples and others plugged their No. 1 L. Cox, NE cor. NW NW, Section 12-17-14, as a failure at 1,640 feet.

Cromwell Field

In the Cromwell Field, the Carter Oil Co. and Gardner Petroleum Co.'s No. 3 Bunner, C NE SE SW, Section 9-10-8, was standing at 3,456 feet in sand topped at 3,372 feet and was flowing 280 bbls. daily. The same companies' No. 4 Bunner, C NW SE SW, same section, was good for 130 bbls. daily in sand at 3,396-3,408 feet.

In the northeast trend of the Papoose Pool, Hughes County, the Phillips Petroleum Co. had a rig on the ground for No. 1 Arber, C NW NE SE, Section 3-9-9. The Independent Oil & Gas Co. was drilling below 600 feet in its No. 1 Alexander, C NW NE NE, Section 2-9-9.

In northwestern Pontotoc County, Bunson and others were drilling their No. 1 Brown, C SE SW SE, Section 32-5-5, at 150 feet. North of Ada, the American Oil & Refining Co. was drilling its No. 1, C SE NE SW, Section 3-4-6, below 700 feet.

In the Duncan Pool, northern Kay County, the Twin State Oil Co. was drilling its No. 1 Youngmeyer, SE cor. Section 17-29-1w, at 225 feet. The Comar Oil Co. was also spudding its No. 1 B. McCormack, NW cor. SW SE, Section 21-29-1w, at 120 feet. Jarvis & McComber's No. 1 in the SE cor. SW SE, Section 15-29-1w, about 1¾ miles northeast of the discovery well, was reported to have encountered water at 2,022 feet, but was going ahead, hoping to pick up the oil pay at a lower depth. The discovery well, Comar's No. 1 Duncan, NE cor. SW, Section 21-29-1w, was still flowing 1,185 bbls. Monday from total depth of 2,088½ feet.

In the Blackwell Pool, Polin & Renny completed their No. 1 Case, SE cor. SW, Section 4-27-1w, for 34,000,000 feet of gas in sand at 3,434-41 feet.

The O'Kansas Oil & Gas Co. abandoned its No. 1 Hall, SE cor. NE SW, Section 14-25-1e, at 3,898 feet.

Davenport District

In the Davenport district of Lincoln County, the Magnolia Petroleum Co. was rigging up its No. 1 Ely, C NW SW NW, Section 2-14-5, and was spudding No. 1 in the NW cor. NE, Section 3-14-5. The Prairie Oil & Gas Co. was also spudding its No. 1 Stout, NE cor. NW, same section. The Southwestern Oil Co. & Selby were spudding their No. 1 Bagwell, NW cor. SE, same section, also.

In Okmulgee County, the Sheridan Oil Co. was drilling its No. 1, SW cor. Section 8-15-12, at 1,210 feet.

In Muskogee County, Harshey and others were drilling their No. 1 Lee, SE cor. NW, Section 35-15-16, at 540 feet. E. A. Hutchinson was also drilling at 850 feet in his No. 1 Lee, CEL NW SE, same section.

In Waggoner County, the Sewell Petroleum Co. shut in its No. 1 Endicott, SW cor. NW NW, Section 17-17-16, for 7,500,000 feet of gas in sand at 975-80 feet. Knox and others also shut in their No. 1 McIntosh, a south offset, for 6,000,000 feet of gas in sand at 975-82 feet. Perry & Hartman's No. 1 G. Beck, NE cor. Section 18-17-16, was dry and abandoned at 990 feet. Perry and others' No. 1, SE cor. NE NE, same section, made 4,000,000 feet of gas at 980-82 feet, and their No. 2 McIntosh, a south offset, was good for 4,000,000 feet of gas at 967-82 feet.

NORTH CENTRAL TEXAS

FORT WORTH, Tex., Oct. 21.—Six feet in a sand and drilling at 2,031 feet, the South Vernon Oil Co.'s No. 1 Stephens in the South Vernon Pool, Wilbarger County, blew itself in Thursday night for an estimated production of 2,000 to 2,500 bbls. daily. The well is a 5 month-old-producer and was completed in June at 1,970 feet for a daily production of 250 bbls. With the completion of the Thelma Wells, Bridwell & Heydrick and Winnipeg Oil Co. gushers on offset leases, the well was drilled to the 2,031-foot level and it responded with the largest flow of any well so far drilled in the pool. All available storage on the lease was quickly filled and without pipe line connections, earthen storage is being constructed to handle the surplus flow, until still storage can be erected, which is being rushed to completion as rapidly as possible. Several producing sands were found in the well. One good for around 200 bbls. daily was penetrated at 1,360 feet.

A test of importance to that territory was semicompleted Friday by the Sheerin-McCamey Co. in its No. 1 Stephens, which is showing for 150 to 200 bbls. daily at 1,360 feet, the same depth sand as found in the South Vernon Oil Co.'s No. 1 Stephens. The new shallow producer is one-half mile east of the gusher producers and extends the producing territory that distance east. It will immediately be placed on the pump and tested. If it fails to make a commercial well at the present shallow depth it will be drilled to the 2,030-foot producing level.

Many new locations have been made in the district in the past few days, and the construction of at least a dozen derricks will start within the next week.

It is reported from Olney, Archer County, that Lane and others' No. 1 White, Lot 13, Section 34, A. T. N. C. L. Survey, is flowing by heads from a sand at 1,605 feet, in excess of 500 bbls. a day. If the well holds its initial production, it will be the largest producer so far completed in that section of Archer County.

The Gulf Production Co.'s new producer, the No. 26 Burnett, South Vernon Pool, Wilbarger County, was placed on the pump and is showing better than 100 bbls. daily at 1,589 feet. This well may be drilled deeper if it fails to maintain its initial production.

A 40-acre lease, out of Block 2,401, Harmel lands, Archer County, is reported purchased by Murchison, Fain and others for a consideration of $40,000. Half was paid in cash and half to be paid in oil from the lease. The location for the No. 1 test has been made in the northwest corner of the lease.

GULF COAST

HOUSTON, Tex., Oct. 21.—The Vacuum Oil Co.'s No. 1 Miller, in Calcasieu Parish, south Louisiana, continues to flow an average of 1,800 bbls. of oil. It is making about 15 per cent sediment and water. This percentage did not increase during the week.

The Southern Natural Gas Co. set 6-inch casing in No. 1 Hobson, Live Oak County, Texas, at 1,005 feet. It is north of the town of Three Rivers. The Houston Oil Co. is drilling two tests on the Cartwright ranch in that county on which it now has three gassers. Hawley & Ayres have started No. 2, south of Fant City.

In Medina County, the California-Medina Oil Co.'s No. 1, northwest of De Hanis, is below 2,650 feet. The Amy Oil Co.'s No. 1, south of Devine, is at 1,910 feet. The Plateau Oil Co. has started a test for a shallow sand showing.

The Good Oil Co.'s No. 1, 2 miles south of Akins, in Bexar County, is drilling below 900 feet. Oil showed in a shale formation at 417 feet.

ORGANIZATION FORMED TO FIGHT HIGHER RATES

PITTSBURGH, Pa., Oct. 20.—Enlarging the scope of the organization formed here originally to protest against increased rates for natural gas in western Pennsylvania, representatives of more than a dozen cities in Pennsylvania, West Viriginia, Ohio and Kentucky, have organized the municipal gas conference to present a united front on behalf of the public in dealing with large public service corporations, chiefly natural gas companies.

Mayor William A. Magee, who called the conference, was named chairman of the executive committee, with C. O. Rose, a councilman of Cincinnati, who drafted the plan of organization, as vice chairman. Eight other members of the executive committee were named, representing cities of over 50,000 in population. A meeting of the executive committee to further plans for the organization was called for November 19 at Columbus, Ohio. Other members of that committee included S. L. Gilson, Erie, Pa.

To provide finances for the organization the executive committee fixed annual dues at 1 mill per capita of population based upon the 1920 census. An additional assessment of 1 cent per capita of population for each municipality represented was levied to get the conference started. Reports upon the reception given by the various municipalities to the plan for financing the organization will be made at the Columbus conference.

FILM SHOWS PROPERTIES

A motion picture showing different types of drilling equipment, pumping devices, gasoline plants and other views of properties of the Amerada Petroleum Corp. in Oklahoma and Kansas featured a dinner given by the company in honor of its farm bosses, district foremen, geologists, scouts and other employes held at the Hotel Tulsa. T. J. Ryder, president of the company, and E. DeGolyer, vice president and general manager, made short addresses. The motion picture will be sent to different properties of the company to be shown to all employes.

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MULTIPLICATION OF GASOLINE PUMPS AND COLLAPSE OF TANK WAGON PRICES

By L. M. Fanning

The tank wagon price structure for gasoline is rapidly disappearing under conditions of competition in the sale of the product unprecedented in the history of the oil industry. There has never before been such rivalry between companies in marketing gasoline as during the past year. No figures as to growth are available but it is believed there has been a bigger expansion in establishment of filling stations and curb pumps this year than occurred during the preceding two years. Estimates place the total number of drive-in filling stations at from 25,000 to 35,000 and the number of curb pumps at from 225,000 to 275,000.

With gasoline in oversupply, newcomers in the industry have been able to get footholds in many territories and to break ground by underselling. Rivalry for sales is not confined to competition between this element versus old line companies, however. This year has seen many of the established independent companies extending filling station and curb pump operations in new territory, in active competition among themselves and against the Standard Oil companies.

It is also a fact that much gasoline emanating from the so-called Standard Oil group is appearing directly or through jobbers in districts outside those that have been more or less adhered to by the different companies since the segregation. This is occurring much more than has formerly been the case, and, except in the matter of direct marketing, the lines that have marked off distribution territories for years are being shot to pieces.

Rush to Unload

It is not straining the point to say that the principal element behind the growing rivalry to dispose of gasoline is the tendency on the part of the industry as a whole to get rid of a product with which it finds itself overstocked: in other words, that as the big consuming season draws to a close, unloading is increasing. This fact is giving what might be termed a final jolt to the tank wagon price structure which has been constantly weakening for the last two or three years. Those in the oil companies who are actually handling sales are frank to admit the tank wagon price does not mean much under present conditions.

The situation in the East, which is typical broadly of conditions east of the Rockies, may be summed up as follows:

Installation of hundreds of new pumps by companies which have formerly maintained pumps in given territories. This has been forced, according to these companies, by competitive action to protect sales and to get a logical sales increase in an increasing consumptive market. For instance, where formerly a dealer handled the brands of only one or two companies, other companies have installed tanks and pumps for him with a result that, technically at any rate, the companies whose product formerly filled all this dealer's requirements are now forced to share the business with the new ones. This cutting in on the gallonage at an individual station has required the oil companies to go farther up the street or around the corner or into probably a new territory and install additional pumps at new locations—many at locations already occupied by one or two competitors' pumps—and the result has been a multiplication of pump installations.

Most of the gasoline trade to the consumer in the East is done through the curb pump. In the Middle West competition for the business is reflected as pronouncedly by increase in the number of filling stations. There has also been a big increase in the number of filling stations in the East, particularly in the metropolitan district of New York, where formerly filling stations were few and far between. The Pure Oil Co., which until recently marketed gasoline only in a limited way in the territory, now has some 20 filling stations, all of which have sprung up in the last year or two.

A canvass of the situation in the East reveals that bootleg or distress gasoline is in the market in enough quantity to bear down prices radically. Small dealers have increased rapidly in numbers during the past year, installed tankage on railways, are buying in carload lots and selling direct to curb pump dealers and through their own pumps. Some of these dealers have been and are operating on a margin of from 7, 9 to 11 cents a gallon, depending upon the cost of the car lots to them and whether they are selling through another dealer or direct. Gasoline in carload lots has been changing hands at 10½ cents a gallon, with probably some shading. Isolated shipments are reported at even substantially lower prices.

These small dealers with little or no overhead are consistently underselling the established oil companies who are seeking to preserve some semblance of a tank wagon market based upon costs of manufacture and distribution. Some of the larger companies marketing gasoline direct to the consumer through their own stations or through dealers, and which also sell to the jobbers and others in carload lots, report that under the present spread jobbers buying their gasoline f.o.b. refinery are able to resell on some transactions and the buyer resells to the consumer at a price under that at which the companies can afford to sell their gasoline direct to pumps or to consumers. In other words, the situation is so analogous as to find a company's own product underselling itself.

The pump dealers' margin, nominally 2 cents a gallon, varies from 3 to 6 cents. In contracting for sales many of the companies have a graduated scale of price to the dealer depending upon the quantity he can turn over. The larger dealer gets a shade on the price, and as the competitive situation dictates a policy of keeping and increasing pump installations so that more gasoline will move the dealer has found himself in an increasingly strategic position to dictate to the oil companies. On the whole, the companies are arhering to a set policy, and trying to maintain set margins depending upon gallonage handled. However, with margins running from 3 to 6 cents a gallon, dealers are engaging in some smart competition on their own account.

Prices Vary Widely

In an outlying district of New York City, over a radius of about 10 miles, gasoline at filling stations an dpumps is selling at prices varying from 15 to 21 cents a gallon. Within a block or two one brand of gasoline is selling at three different prices. The variation in gasoline price to the consumer in almost any section of the country at the present time is attributable not alone to invasion of distress gasoline and generally weak refinery markets, but to local dealer warfare. Adjoining dealers' carrying the same brand are trying to get the business by underselling each other and are able to cut and still make substantial profit because of the comfortable differential that exists between the price they have to pay the companies and the price the companies are seeking to maintain to the consumer based upon their costs.

The weakening and threatened extinction of the tank wagon price structure has serious aspects for the established oil business. For some two years gasoline has been a buyers' market. This has forced the oil companies to make concessions to get their share of the business. Much of the increased competition is legitimate expansion due to increased consumption of gasoline, but the inroads made by small dealers with little or no overhead is the demoralizing feature. To compete with this class of business companies are forced in many districts to sell gasoline at a loss.

Monopoly Theory Exploded

A significant feature of the situation is that the consumer is benefiting all along the line, and the inability of the

companies to maintain a steady tank wagon market is shooting holes through the theory that gasoline prices can be pegged by large companies at prices either unreasonable or reasonable under conditions of oversupply or overcompetition. No one in the gasoline business will deny there is overcompetition in marketing at the present time. Filling stations are overbuilt and curb pumps are way ahead of themselves. One dealer station in the vicinity of New York has seven pumps for as many brands of gasoline.

While the gasoline price structure has materially broken down throughout the country, it must be appreciated that as the season has advanced companies have found it increasingly hard to reduce supplies of gasoline on hand. Further cuts in the price of gasoline are expected to occur as this unloading tendency continues. Each year is demonstrating more conclusively than the preceding year that there is going to be plently of gasoline, that cracking and natural gasoline additions to the straight run supply are sufficient to overbalance any consideration of shortage of crude supply. Reestablishment of a healthy tank wagon market for gasoline is possible as refineries overcome the tendency to overmanufacture gasoline. It is anticipated that a conservative policy, which takes into careful consideration the ability of the market to absorb, undertaken by refineries in connection with gasoline next year, will give the tank wagon market a chance to recover. If stocks are sufficiently liquidated this year so refiners will not find themselves forced to continue to convert gasoline into cash, the element of distress gasoline which has been the principal factor in undermining prices will be removed but continued keen competition in the marketing of gasoline can be looked for during several years to come.

NEW ORIFICE METER LEAFLET NOW READY

The new wide range orifice meter for measuring the gas flow in lines permitting a ratio of variation of 20 to 1 is described in a new leaflet published by The Foxboro Co,. Inc., Foxboro, Mass. This new meter is one of the biggest steps forward in recent years in the matter of measuring gas flows. Until the perfection of the new meter the widest range in flow to be measured was in a ratio of about 8 to 1. The installation required two completed orifice meters, one differential regulator and a number of gate valves. The new wide range meter can take care of a greater variation and utilizes simpler and less expensive equipment, according to the claims of the manufacturers.

The setting of the new meter consists of a recorder of 100-inch range, with the proper static range, augmented by one with 10-inch or 20-inch float type differential recorder. Both differential gauges are connected into the same orifice flange union. The wide range of measurement is made possible because minute differential pressures are recorded accurately on the low range gauge. When flows are encountered that will cause a differential pressure greater than 10 or 20 inches, the pen on the low range differential gauge will record on the outer edge of the chart, and the differential pressures in excess of 10 or 20 inches are read from the 100-inch chart. The check valves prevent the mercury from leaving the low range gauge during the period in which it is over-ranged.

The new meter was made possible because of the ability of the check valves to hold the mercury in the meter during long periods of over-range. The check valves are always immersed in the mercury and therefore are protected from any moisture or dirt that might get into the gauge.

RUSSIA TO BUILD PIPE LINE

The Russian Council of Labor and Defense has decided to build a new oil tube from Grozny to the harbor of Tuapse. The work which will not begin till next year is estimated to cost 20,000,000 rubles.

Refiners Syndicate in Czechoslovakia To Control Prices

The unsatisfactory conditions that have prevailed for the past three or four years in the Czechoslovak petroleum refining industry has finally led to an agreement among seven of the leading refiners of the country to establish a sales cartel, reported by United States Commercial Attache H. L. Groves at Prague. The object of this organization will be to regulate the domestic trade of the different refineries by a common agreement for the maintenance of a uniform price policy and a more equitable distribution of the trade among the different establishments.

The refineries at Pardubice, Kralupy, Kolin, Schumperk in Moravia, Privoz, Bohumin (Oderberg), and Bratislava (Pressburg) signed the cartel agreement in mid-August. This agreement foresees the establishment of contingents on domestic sales for different refineries, covering gasoline, kerosene, gas oil, lubricating oils, and paraffin, but does not, however, affect the domestic sale of petroleum asphalt, petroleum coke, American cylinder oil, American white vaseline oil, or naphthalene acids and soaps, which remain entirely free.

The cartel proposes to establish a central office in Prague, through which orders will be passed and forwarded to the different refineries on the basis of fixed contingent. The management of the central office will be in the hands of a board consisting of one representative and a substitute from each of the member refineries. Each refinery will deposit a specified sum as a guaranty for the fulfillment of the agreement. Disputes arising in the cartel between members will be settled by arbitration. The agreement is signed for a period of three years.

There are still three or four refineries in the country which have not yet gone into the cartel, but it is understood that a serious effort will be made to gain the affiliation of these concerns in order to make the cartel comprehensive. Members of the cartel are obliged to dispose of their products coming under the agreement through the cartel organization, regardless of whether a separate sales organization is maintained or not. The agreement does not affect the purchasing end of the business, however.

Importers and middlemen in the trade are voicing considerable objection to the new refiners' organization, fearing that it will prejudice their own trading interests. The refiners have already started some agitation on behalf of a higher protective tariff for petroleum products, while the trading interests are maintaining that the tariff on many products is already too high.

The producing capacity of the seven refineries is substantially greater than the requirements of the home market, and this situation has led in the last two or three years to keen competition and the partial or complete shutting down of a number of plants. Several of the refineries have experienced difficulty in obtaining crude oil from the controlled sources of supply in Poland (East Galicia) and Rumania, and to relieve this situation an increasing amout of American crude oil is being imported via Hamburg.

The statistics for 1923 show a very considerable decline in the importation of crude, kerosene and gasoline compared with 1922, but there appears to have been a recovery in this trade during the current year, if figures for the first six months may be taken as a reliable indication. For the first half of 1923 imports of petroleum products totaled 43,400 metric tons; for the first half of 1924 receipts reached 81,580. Of these amounts, Poland supplied 33,031 tons in 1923 and 59,176 in 1924, and Germany 4,242 in 1923 and 8,389 in 1924.

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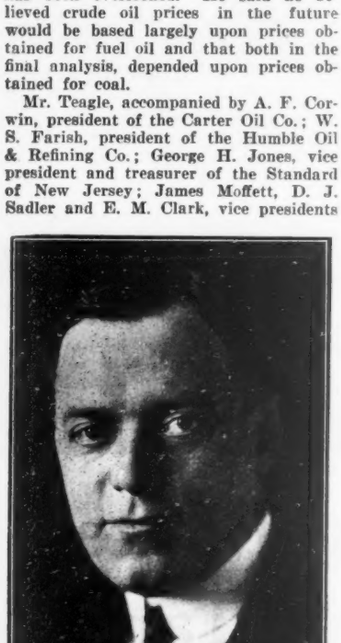
MALONEY ALONE

Gasoline Prices to Depend on Coal, Is Statement of Teagle

That the price of gasoline in the future will depend upon the price of coal was a statement made in Tulsa on Tuesday by Walter C. Teagle, president of the Standard Oil Co. of New Jersey in discussing the situation affecting the crude and refined oil markets. Mr. Teagle asserted the trouble with the industry during the past two or three years has been the fact the prime importance of fuel oil has been overlooked. He said he believed crude oil prices in the future would be based largely upon prices obtained for fuel oil and that both in the final analysis, depended upon prices obtained for coal.

Mr. Teagle, accompanied by A. F. Corwin, president of the Carter Oil Co.; W. S. Farish, president of the Humble Oil & Refining Co.; George H. Jones, vice president and treasurer of the Standard of New Jersey; James Moffett, D. J. Sadler and E. M. Clark, vice presidents



Walter C. Teagle

of the Standard, is making an inspection trip of properties of his company, having gone as far west as Colorado and going to Shreveport, La., from Tulsa. From Shreveport the party will go to Charleston, S. C., and thence to New York, reaching New York next Tuesday.

In an address Tuesday night before the Okmulgee District Oil & Gas Association, Mr. Teagle stressed the importance of fuel oil in the making of prices for crude oil and gasoline. His speech was similar to the article he wrote on the subject which will appear in the October issue of The Lamp, which article is reproduced on Page 23 of this issue of The Oil and Gas Journal.

Mr. Teagle does not fear any ill effects at this time or in the near future upon the crude situation in the United States as a result of oil developments abroad. He stated the reason Russia has more oil to export now than formerly is due to the fact consumption of oil in Russia has decreased appreciably. He also seemed to feel the prospects of a considerable production in Colorado were remote, stating it would be an expensive proposition to drill in that area and that no real test of the section had been made as yet as wells had not been drilled deeply enough to thoroughly test the structures.

RUMANIA'S NEW RECORD

During the month of August the Rumanian oil industry set up a new record reaching 165,000 tons, the largest monthly production since the war. The figure is equal to the monthly average of 1913, when the Rumanian production reached the highest annual total it has even known.

NEW JERSEY AND INDIANA COMPANIES FILE ANSWER IN CRACKING SUITS

The full text of the answer of the Standard Oil Co. (New Jersey) and the Standard Development Co., primary defendants in the Government's patent suit, filed in the District Court, Chicago, October 18, by Chester O. Swain and Stuart Templeton, solicitors for the two defendants named, enters general and specific denials that they engaged in any combination or conspiracy in restraint of trade as charged in the Government's petition, or otherwise sought any monopoly. It is denied that their patents are for processes in all substantial respects the same as those known and employed a long time before. The companies aver that the socalled primary or pooling agreements to which they are a party were not entered into for any ulterior purpose and that such agreements have not tended to bring about any tendency toward lessening competition or creating a monopoly, but, as a matter of fact, quite the reverse. The answer goes into details as to the development and acquirement of cracking patents, and brings out that the agreements, objected to by the Government, were made to obviate prolonged and expensive litigation and prolonged uncertainty as to rights and liabilities, the effect being to make possible a freer and more unrestrained use of the various processes involved.

Indiana Company Answer

The answer of the Standard Oil Co. of Indiana, filed through its general counsel, Chauncey W. Martyn, shows that. "It invented and developed the first process for producing cracked gasoline, fully covered by 23 different, regularly issued, valid, United States patents, and is not an improved process for making something already being produced but creates a commodity which previously had never existed in commercial quantity and equals in efficiency as a motor fuel the gasoline formerly produced by other methods.

"The company might lawfully have retained this process exclusively for itself. Instead, it has, from the beginning, licensed other manufacturers, and thus greatly increased the amount of gasoline produced, and thereby kept the price of gasoline to consumers much less than it would otherwise have been.

"The other oil companies named as constituting the socalled 'pool' of patents, have each developed a separate process for producing cracked gasoline, which processes are severally covered by patents owned by these oil companies. In the development and practice of such processes it was found that in material respects they overlapped and infringed one another, so that the owner of each of the four different processes claimed its patents were infringed by practice under each of the other processes.

Infringement Suits

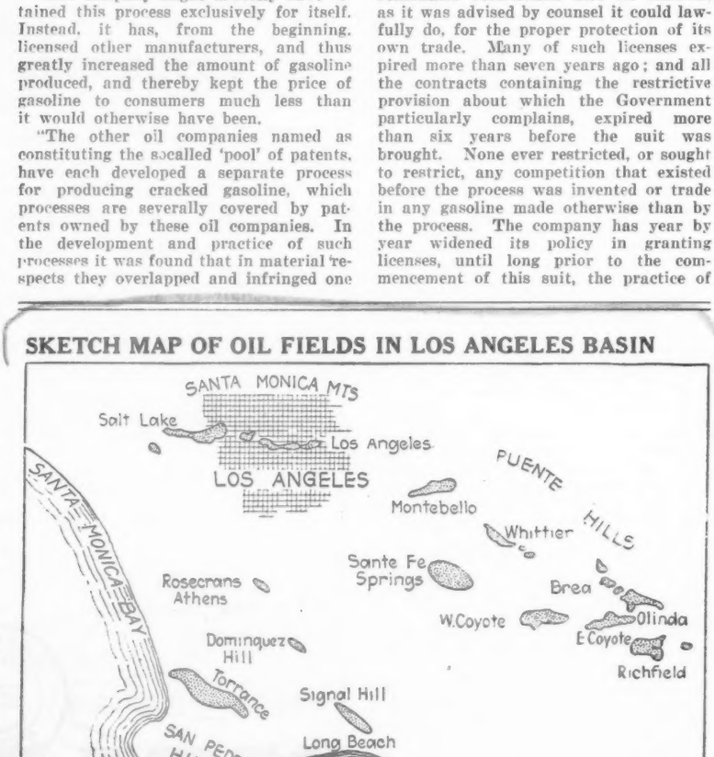
"Infringement suits had already been begun and the owners of said processes had to either adjust their contentions and controversies by mutual agreement, or spend many years and large sums in litigation, the outcome of which could not be foretold, with the necessary result that in the meantime the production of cracked gasoline would have been effectively prevented because no one would dare to make the large investments necessary to practice the processes for fear of heavy damages that might be recovered in such infringement litigation; and the other manufacturers desiring to use the process would have been deterred from taking licenses and from making the necessary investment from fear of such infringement suits.

"The socalled pooling agreements were entered into, not for the purpose, or with the effect, of creating any pool whatsoever, but for the purpose and with the result that the owner of each process is free to manufacture gasoline under it without fear of infringement of any other patents, and any manufacturer can procure a license and produce cracked gasoline with immunity from infringement or damages therefor. They were made to settle litigation then pending and threatened and for no other purpose whatever. They were not intended to nor do they restrain trade, but on the contrary promote freedom of competition and the settlement of such litigation was necessary to prevent a shortage of motor fuel and a consequent high price to the public.

Licenses Expired

"In the initial stages of its experience in granting licenses to other manufacturers, the Standard of Indiana put such reasonable restrictions into its licenses, as it was advised by counsel it could lawfully do, for the proper protection of its own trade. Many of such licenses expired more than seven years ago; and all the contracts containing the restrictive provision about which the Government particularly complains, expired more than six years before the suit was brought. None ever restricted, or sought to restrict, any competition that existed before the process was invented or trade in any gasoline made otherwise than by the process. The company has year by year widened its policy in granting licenses, until long prior to the commencement of this suit, the practice of placing any restriction whatsoever upon licensees, even in the distribution of the product produced under the patented process, had been abandoned."

SKETCH MAP OF OIL FIELDS IN LOS ANGELES BASIN



NEW WELLS UNDER WAY IN RICHLAND DISTRICT

CORSICANA, Tex., Oct. 18.—In the Richland district of Navarro County, two new wells are under way. The Gulf Production Co. was rigging up a rotary for its No. 3 Elkins, on the Choate Survey, and Richardson & McAllister had a derrick built for No. 1 Milligan on the Lotham Survey. The Sun Oil Co. plugged and abandoned No. 1 Brown, on the John Choate Survey, as a failure at 2,979 feet.

There was nothing new reported from the Currie district with the exception that Snowden & McSweeney were rigging up to drill deeper in No. 11 Longbotham, Currie Survey, at total depth of 3,108 feet.

Some small completions were reported from the Powell Field. The U. S. Texas Corp.'s No. 2 Ramsey, Shallow Smith Survey, topped the sand at 1,500 feet and was good for 20 bbls. initially. Total depth was 1,605 feet. Elliott and others had a 450-bbl. producer in No. 3 Hill, on the Broyles Survey, which topped the sand at 2,842 feet and was drilled to 2,954 feet. The Texas Co. and Magnolia Petroleum Co. found sand at 1,515-45 feet in No. 28 I. T. Kent, on the Smith Survey, and it was good for 56 bbls. Bottom of the hole was 20 feet deper. The Trinity & Brazos Valley Railway Co. had a 15-bbl. well in No. 2 Harvard, Mathews Survey, which topped sand at 980 feet and was drilled to 1,018 feet.

The Pure Oil Co.'s No. 1 Kenner, Love Survey, was flowing salt water at total depth of 3,077 feet and was to be plugged back.

Neeney & Smith will drill deeper in No. 50 Goldman, on the Lockhart Survey, which was shut down at 1,471 feet.

In Limestone County, T. Frank Smith and others were shut down for orders in No. 1 Kennedy, on the P. Varela Survey, and making 3,000,000 feet of gas from sand topped at 2,942-47 feet. Gardner and associates were shut down for engine repairs in No. 1 Speight, on the A. Varela Survey, with total depth at 3,120 feet.

W. PHILLIPS MAY BUY STERLING REFINERY

Negotiations are under way for the purchase of the properties of the Sterling Oil & Refining Co., of Wichita, Kans., by the Waite Phillips Co. of Tulsa. The former company whose properties consist primarily of a 5,000-bbl. refinery at Wichita, with a pipe line connecting to the Fox-Bush Field of Kansas, has been in the hands of a Federal receiver appointed last summer. The refinery, which is equipped with both Fleming and Dubbs cracking stills, has been shut down for several months.

The Waite Phillips Co. has a refinery in operation at Okmulgee, Okla., with production from several hundred wells in Oklahoma and Kansas. In addition the company has extensive bulk and retail marketing facilities in Oklahoma, Arkansas, Kansas and Missouri. If the deal is consummated it is expected the purchasing company will extend its pipe line from the Fox-Bush Field to Rainbow Bend Pool in Kansas, where the company has a half interest in a production now totaling around 7,000 bbls. daily.

PORTUGUESE EAST AFRICA

Imnyaminga Petroleum, Ltd., was formed at Lourenco Marques last year. The company is registered at Salisbury, Rhodesia, with a board composed of F. C. Dumat, Johannesburg; A. L. Lawley, Beira; and J. F. Kapnek, Salisbury. Its object is to acquire the sole and exclusive rights of prospecting for coal and oil in a concession of about 40,000 square miles in the territory of Mozambique Co., which is now connected by railway with the port of Beira.

ADVANCE IN GASOLINES AGAIN IN OKLAHOMA

(Continued from Page 22)

to 9 cents the first of this week. During the late fall and winter season many refiners are accustomed to use this grade rather than the 58-60, 437 grade and this accounts for the improvement in the domestic demand. There was no special activity in the 64-66 or the 68-70 grades but practically all refiners raised their prices ¼ cent during the week. There has been no improvement in the demand for naphthas and prices have not changed.

Kerosene and Distillates

Several refiners in Oklahoma and North Texas during the past week offered both 41-43 and 42-44 water white kerosenes at lower prices. One North Texas refiner was reported to have offered the 41-43 water white grade at a basis of 4½ cents North Texas and 4⅝ cents Group 3. Refiners with material to move were forced to meet this competition and lowered their prices accordingly. This cheaper material was not so apparent the first of this week and it was felt by some that prices would return to their former levels by the end of the week. The distillate movement is still characterized as slow due to the warm weather but prices are unchanged.

Natural Gasolines and Blends

Although the volume of buying the last week was not so large as the first two weeks of the month, prices of natural gasolines are the same as last week. The Standard of New Jersey was reported to be still purchasing some Grade A for delivery before the end of the month. Several of the larger manufacturers state that their output of the absorption grades are sold up for the remainder of the month and it is predicted that due to this situation these grades at least will remain firm during the next 10 days.

Grade C. is soft and some material is reported to have sold as low as 7 cents last week. It was not available at this price the first of this week, the price level being 7¼ to 7½ cents the same as a week ago.

One buyer of blends stated that he found very little offered for interstate shipment. This is due to the high prices for natural gasolines and the relatively low prices at which straight run gasolines are being offered. No activity in blends is expected until this relative situation changes and blenders are in a position to offer their products under the price of 58-60, 437 straight run.

Fuel and Gas Oils

The bottom on 24-26 fuel oil has been 92½ cents for several days. The demand is steady and refiners have little to offer after taking care of their railroad contracts. Gas oil is being offered by several refiners but the demand during the past week has been sufficient to hold the prices firm.

Neutrals and Wax

The action of Cosden & Co. in lowering neutral prices had been expected ever since the first of October. At least two refiners in Oklahoma had previously lowered their prices. It is expected the lower prices will result in a better movement. Those in touch with the market predict bottom prices have now been reached. Wax is being offered both for spot and future delivery. Buyers are endeavoring to purchase at 5 cents with sellers generally asking from 5¼ to 5½ cents.

FUEL OIL SHOULD CONTROL CRUDE PRICE

(Continued from Page 23)

fuel oil advanced. The producer whose costs are such as to enable him successfully to compete on a price basis with coal is entitled to his market outlet, but the return to the producers of crude who force this competition can only be on the basis of value determined primarily by the value of coal.

If overproduction of crude makes it necessary for the industry to sell petroleum in the form of fuel oil in competition with coal, then there can be no question but that the consumer of gasoline will participate in the lower value so established.

There is still another fact which is deserving of special comment, namely that one of the most important developments of the past few years has been the multiplication of transportation facilities—pipe lines and tank steamers—which of late years have so closely tied the producing areas to each other and to the consuming centers that the effect of overproduction and under consumption in any area is immediately transmitted to the whole chain of producing and marketing activities. There is no important consuming area which is not now closely connected with a producing zone, and no producing area which by reason of the same means of communication is not immediately responsive to the activities of other producing zones. Production from a new pool which creates a surplus above the total consumption, or in excess of the industry's ability to finance and store, should in the ordinary operation of trade, exert such depreciation of prices as to stimulate consumption to the necessary level in the process of correcting the condition of over supply.

Big Sale of Fuel Oil

Figures of production and consumption during the three-year period show that more than half of the total supply has been sold as fuel oil. This quantity has been much in excess of what could have been sold at its intrinsic value and has forced the selling of the whole on a price basis competitive with coal. Gasoline has been produced by cracking this low-priced fuel oil at a lower cost than that of the natural gasoline obtained from the distillation of the crude oil.

May not the unsuspected but controlling cause of present difficulties in the industry be the fact that it has not recognized the evolution that has been gradually taking place from gasoline to fuel oil as the controlling product? The industry early in each of the past two years counted on a greatly increased summer demand for gasoline to establish its value on a higher level, and in anticipation of this bid up the price of crude oil. The expectation of higher values was undoubtedly further influenced by the fact that the cost of the crude oil accumulated in storage was considerably above the quotations at the wells for current production. It now appears that the industry erred in anticipating these higher values, due to its failure to recognize the value of the true controlling product, which for the present would seem to be fuel oil.

If this is the true explanation, then the much hoped for return to normalcy within the industry will be hastened by general recognition of the fact that fuel oil under conditions as they exist today, is the product that governs the market price for crude and its produts.

OIL RATE HEARINGS BEGUN AT FORT WORTH

FORT WORTH, Tex., Oct. 20.—Approximately 150 traffic men were in attendance here today at the opening of the rate hearing involving the Mid-Continent oil rate structure. The hearing is a continuance of that held at Excelsior Springs, Mo., early in June. Most of the day was taken by preliminaries. Ed P. Byars, representing the North Texas refiners, was on the stand late in the day. It is expected that it will require several days to take his testimony.

It is certain the record in the case will be voluminous and the hearing will probably consume two weeks time. Practically every refinery organization in Kansas, Oklahoma and North Central Texas is represented. The hearing is being held at the Texas Hotel before Commissioner Cox and Examiner Seal.

WARREN COUNTY, KY., HAS 2,000 BBL. WELL

BOWLING GREEN, Ky., Oct. 20.—T. A. Sheridan's No. 4 on tract No. 2, Georgianna Davenport, in the Davenport Pool, Warren County, is flowing an estimated amount of from 2,000 to 5,000 bbls. at 461 feet, 4 feet in the sand.

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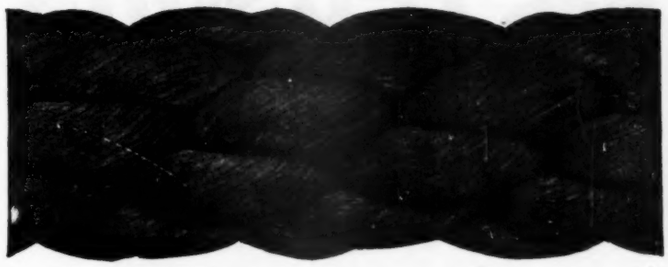

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Republic Supply Company—Oklahoma
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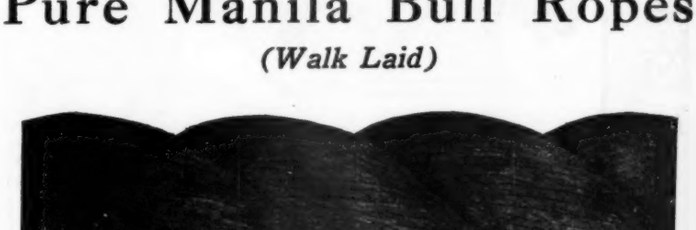

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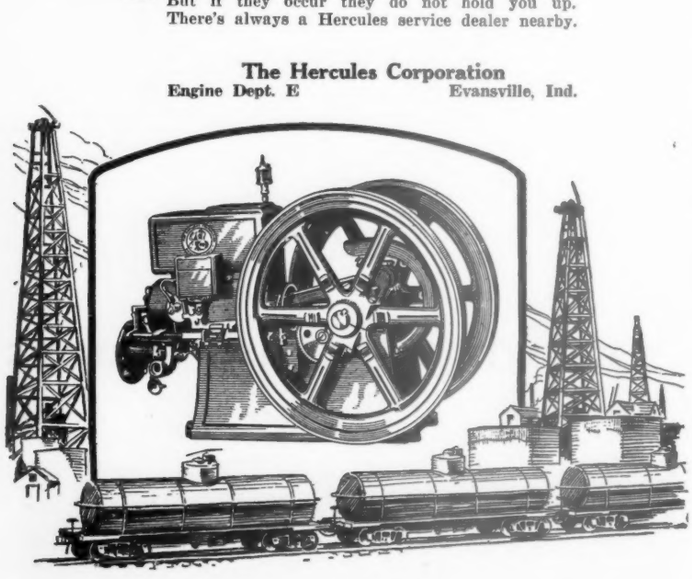

HERCULES ENGINES

ACCUMULATED STOCKS MUST DROP BEFORE PRICES CAN BE REVERSED

By L. M. Fanning

While officials of oil companies in the East are inclined to take a brighter view of the outlook for oil, careful observers do not look for any pronounced change upon which a reversed price movement could be based for the next few months. The feeling prevails that basic crude oil prices have probably reached the bottom and that it is now a waiting game to see just what effect the present price level has on holding down new field work. Generally speaking, a gradual decline in crude oil production is expected but the full effect of the low crude price market will probably not be felt for several months. The point is made that proration and previous declines in price have failed to check production appreciably, and that the real story must wait until the producer finds it necessary to effect a considerable slowdown in his operations. In other words, probably the most important factor in considering the immediate future is drilling operations as affecting production.

How Stocks Grew

There is little doubt but that the industry will go into the new year with appreciably larger stocks of crude oil and of finished products than were held at the end of last year. The oversupply has been cumulative over a period of years, and this factor must be recognized as an influence against any sudden reversal of conditions. Even granting a gradual decline in production, there could still be a substantial drawing on stocks without creating any concern as to adequate supply. A study of the storage situation warrants the belief that taking stocks of crude oil and all finished products into consideration draft of from 100,000 to 200,000 bbls. a day could be sustained comfortably over a considerable period and that if this could be effected the industry's position would be greatly strengthened. The indicated total consumption including exports of all products this year is running at a daily average rate of 2,013,000 bbls. Last year it was at the rate of 1,966,000 bbls. or a gain for 1924 of 47,000 bbls. a day. But on the other hand all stocks on hand have increased during the present year at the daily rate of 200,000 bbls. and this is added to an increase in 1923 at an average daily rate of 267,000 bbls. There has been an increase to over 510,000,000 bbls. of crude and finished products in storage compared with 328,299,000 bbls. held at the end of December, 1923. On the basis of these figures, showing an average excess of production and imports of well over 200,000 bbls. a day and in view of the results of this condition on the price structure for crude and all the products, it is apparent the industry needs more than simply a balancing of current supply against current consumption. A steady withdrawal on stocks must be brought about for a real correction of the situation.

Backing Up Tank Farms

A notable feature in connection with the question of storage is the steady increase in pipe line and tank farm crude oil stocks. At the end of August these stocks reached the total of 361,673,000 bbls., a gain of 5,433,000 bbls. for the month, compared with 328,299,000 bbls. on December 31, 1923, and 248,413,000 bbls. at the end of 1922. The additions made this year are sufficient explanation of the break in crude oil prices, and show to what extent the purchasing companies have gone to protect their customers and their connections. While they have endeavored to cut their purchases to a mark more in line with their deliveries, they have provided storage facilities for producers after proration was put in effect with resultant continued increase in crude stocks. On the other hand, the tendency has been for a reduction in crude stocks held by refiners. The estimated rate of production for the balance of the year indicates that pipe line and tank farm crude oil stocks will continue to increase during the remaining months of the year. On the other hand, total stocks of finished products, due to current drafts on gasoline, may show declines for one or two months, but, as stated, total products held in storage at the end of the year will probably be substantially higher than they were at the end of last year.

Refinery Curtailment

The problem before the oil industry is that of reducing its accumulated storage, just as evidently as it is faced with the necessity of holding down production. There are indications several of the large companies recognize this situation and are taking steps to reduce their holdings not only of crude oil but of finished products. In some cases this does not mean a dumping of oil but rather a reduction of crude produced or purchased and if conditions seem to warrant it there is a possibility of a curtailment of runs at refineries during the winter months. If this inclination gains any momentum, purchasing companies will find it increasingly necessary to reduce their takings from the producer. This, also, is a factor in forming the opinion that until price effects an actual substantial reduction in production, crude oil will continue to increase in tank farm storage so there is little chance of a drawing on these stocks for the balance of the year. If refiners generally decide to cut down on their manufacture of gasoline during the winter in anticipation of summer demand and to rely on stocks held over for meeting the balance of their requirements, the effect will naturally be to keep crude oil prices down to around their present level.

Avoid Another 1924

The aim of the entire industry should be to guard against a repetition of this year's situation. It is conceivable production may show a sufficient falling off to bring about a reduction in crude oil stocks early next year. In January of the present year stocks were drawn on 351,000 bbls. and with the prospects looking toward the development of no new pools of great importance, crude prices were advanced. February brought a gain of only 800.000 bbls. in crude stocks, but the monthly gain since then has been from 3,000,000 bbls. to 5,000,000 bbls. It is possible with a drawing on stocks early next year and with a substantial decline in production, the situation will seem to warrant higher prices for crude oil but the consideration for the industry is to adopt a policy of caution against any over-stimulation. This year and last there was over-stimulation of production and over-refining. To gauge the future in oil is extremely difficult. The economic waste of over-production and the specific hardship it works on an industry should outweigh the possible danger of a shortage in looking forward to policies for the coming year. In view of what has turned up in a producing way this year and in view of the industry's stocks, there can be no shortage for some time to come.

Not Fearing Shortage

The thing that would right the industry in short order is a natural precipitate decline in production. The fallacy of banking anything on this possibility has been shown by the history of the industry since 1920. A barrel of crude oil goes a great deal farther than it did a few years ago. Improved refining methods, notably cracking, have removed for some time the chances of a gasoline shortage. The stocks of crude oil and gas and fuel oil on hand at the present time have added significance when this factor is taken into consideration. The output of gasoline can be increased materially as demand justifies such an increase. There has been a complete change in conditions in the last few years in the nature of the provision of adequate petroleum products, and the drive for quantity production of gasoline is no longer the impelling factor. Another matter of importance in relation to the industry's present problem is the growth of competition in producing, refining and marketing oil. There is over-

competition in all these departments. Competition to get out the oil, to increase output and sales, is on such a scale as to react against a stable economic condition in the industry. This situation will work itself out and, while there is little doubt competition will be more than brisk as long as the industry functions as it does, a balance between supply and demand will remove some of its worst features.

COASTAL AND SOUTHWEST OUTPUT IN SEPTEMBER

HOUSTON, Tex., Oct. 20.—The estimated gross production of the Gulf Coast Pools and Southwest Fields combined for the month of September is placed at 3,655,800 bbls., aginst an estimate of 4,119,745 bbls. for August, showing a decrease of 463,945 bbls.

The estimate for the Coastal Pools alone is placed at 2,480,880 bbls., compared with 2,608,092 bbls. in August, representing a decrease of 127,212 bbls. The Hull Pool shows the greatest decrease—107,801 bbls. during the 30 days period. The Goose Creek Pool fell off 32,880 bbls. and Orange 25,847 bbls. The less active pools show nominal declines during the month. Offsetting in part these, is the West Columbia Pool, with an increase of 84,995 bbls. Big Creek in Fort Bend County, is credited with 19,860 bbls. gross during September and Vinton increased 1,646 bbls. The miscellaneous column shows an increase of 10,715 bbls. resulting from the Vacuum Oil Co.'s wildcat producer in Calcasieu Parish, South Louisiana.

The districts in the Southwest show 1,174,920 bbls. gross output for September against 1,511,653 bbls. last month, declining 336,733 bbls. The Luling Field shows an estimated decrease of 314,177 bbls.

The daily average per well in the Gulf Coast Pools is 32⅓ bbls. and in the Luling Field it is estimated at 96 bbls., based on the figures given.

The following table gives the number of producing wells, estimated daily average and gross for each district:

District—	No. Wells	Daily Aver.	Gross Bbls.
Batson	362	1,675	50,250
Barber Hill	14	161	4,830
Blue Ridge	19	748	22,440
Big Creek	5	662	19,860
Dayton	11	106	3,180
Damon Mound	27	1,342	40,260
Edgerly (La.)	16	468	14,040
Goose Creek	267	10,467	314,010
Humble	312	6,946	208,380
Hull	244	18,769	563,070
Jennings (La.)	51	634	19,020
Markham	30	119	3,570
Pierce Jct.	9	250	7,500
Orange	257	10,680	320,400
Spindletop	114	746	22,380
Saratoga	273	1,514	45,420
Sour Lake	409	4,489	134,670
Vinton (La.)	105	5,887	176,610
Welsh-Anse Bute	6	89	2,670
West Columbia	115	15,631	468,930
Miscellaneous	10	1,313	*39,390
Total September	2,656	82,696	2,480,880
Total August	2,643	84,132	2,608,092
Difference	13	1,436	127,212

*Big Creek listed separately. Vacuum Oil Co.'s well in Calcasieu Parish, South Louisiana, included in miscellaneous.

Southwest Fields—			
Luling	326	31,164	946,500
Laredo	304	4,082	122,460
Somerset	234	2,435	73,050
Callham	37	615	18,450
Rockdale-Minerva	192	482	14,460
Total September	1,093	38,778	1,174,920
Total August	1,029	48,763	1,511,653
Difference	64	9,985	336,733
Grand total for September	3,749	121,474	3,655,800
Grand total of Aug.	3,672	132,895	4,119,745
Difference	77	11,411	463,945

Daily average per well Gulf Coast Pools, 32⅓ bbls.
Daily average per well Luling Field, 96 bbls.
Daily average per well for Southwest Fields, 36 bbls.

MUSKOGEE VOTES FRANCHISE

MUSKOGEE, Okla., Oct. 18.—Citizens of Muskogee have sanctioned the renewal of the franchise of the Oklahoma Gas & Electric Co. for a 25-year period, beginning May, 1926, by casting the largest number of votes on record in the city for a special election. The count was 2,609 for renewal and 522 against, a majority of 1,536.

EARLY CONCESSIONS BASIS OF DEVELOPMENT OF OIL IN VENEZUELA

(Continued from Page 74)

erty is owned and being exploited by the Caribbean Petroleum Co., an American corporation affiliated with the interests of the Royal Dutch-Shell and the General Asphalt Company.

The Mene Grande Field, which for a number of years was the only important producing field in the entire district, was located on this concession and is today the principal property and seat of operations of the Caribbean Petroleum Company.

The Valladares concession of 1912 was the last important concession in what may be properly characterized as the earlier period of the petroleum industry in Venezuela. The coming of the World War marked the beginning of a period during which no important new developments were undertaken. But even before the war ended interests in this field had again taken on new life, which has continued with accelerated activity down to the present time. About 80 concessions were granted in 1918, more than had been granted altogether before that date. During 1919, 1920, 1921 and 1922 concessions were numbered by the thousands.

NEW MENACE OF CROMWELL AND PAPOOSE

(Continued from Page 21)

tion will never reach anywhere near the mark expected by many. It may go above 50,000 bbls., however, especially if some of the wells are delayed and a number of them come in together. The chart showing average production per well and for the field from the first of May to the present time, will enable a statistician to figure it out for himself. The average initial production of the first 57 wells in the field whose logs were sent in to the State Geological Survey, was 1,318 bbls. and the average drilling time was 79 days, running all the way from 40 to 150 days, with the exception of the first well.

Correlations and contours on the accompanying map and charts are by Frank C. Greene, president of the Tulsa Geological Society.

EAST COAST CONSUMERS DEPENDS ON TANKERS

(Continued from Page 102)

the United States so far as petroleum products are concerned, although the Middle West probably exceeds it in gasoline consumption alone. The Atlantic Seaboard accounts for an enormous consumption of fuel oil for bunkering vessels and for use in land installations. The industrial and export demand for lubricating oils are also greater than in any other area.

What has gone before in this article, especially regarding the relation of tank steamers to the eastern markets, seems to prove that the oil business is, like other large industries, dependent on and ruled by purely economic factors. Competition is a matter of dollars and cents as related to the factor of transportation costs, other cost factors depending largely on management, being equal.

The following percentages, estimated as accurately as possible, show the approximate relationship between consumption and refinery production and other items in the Atlantic Coast area to the whole country:

Domestic consumption, all products.... .47%
Refinery production ..... .31%
Crude oil production 5%

These percentages picture the Atlantic Coast oil situation in a nut shell. The area is dependent almost entirely on outside sources for crude oil, and dependent to a great extent on outside refining capacity for petroleum products.

MEXICO DISPLACES U. S. OIL

The purchase of crude oil for the railways of Guatemala shifted from the United States to Mexico in 1923. In the entire trade the United States suffered a loss from $67,000 to $64,000, while Mexico gained from $40,000 to $65,000.

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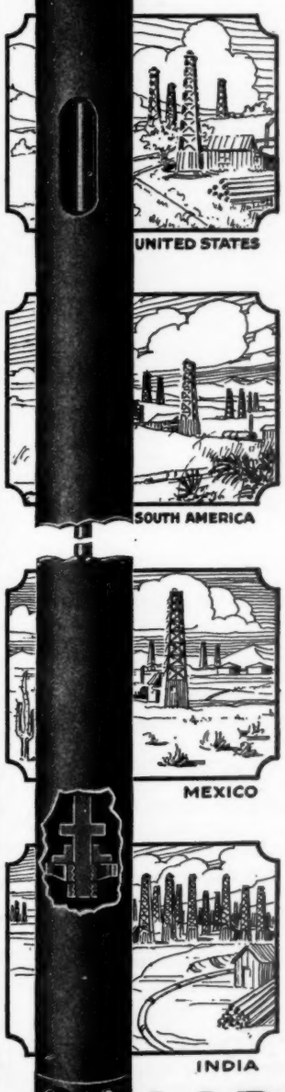

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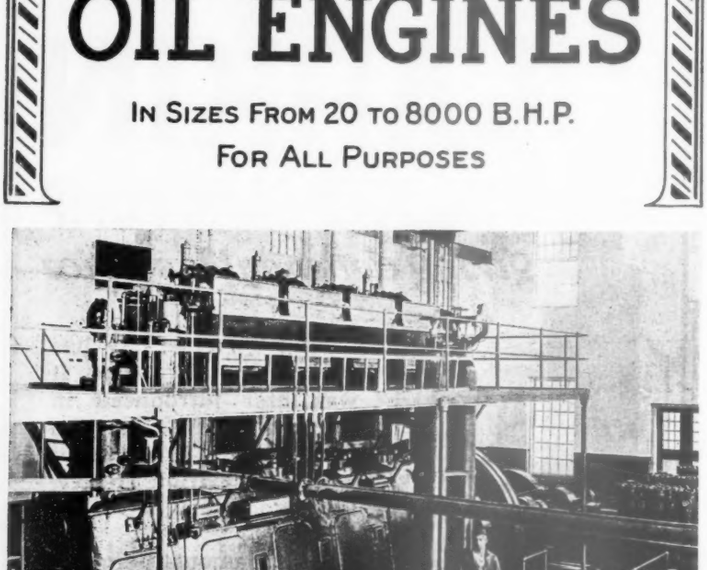

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MEXICAN FIELDS

(Continued from Page 98)

and No. 49, rigging. Its No. 1 Tancasneque, north of the Tamesi River, is drilling in white lime at 2,280 feet. In Chapacao, No. 1 is drilling in shale at 440 feet; No. 2 cemented 8-inch in gray lime at 1,240 feet; No. 3, spudding, and No. 4 cemented 8-inch in lime at 1,710 feet.

In El Barco, Mexican Gulf Oil Co.'s No. 60 is drilling in gray lime at 1,395 feet, and No. 62, drilling in the same formation at 2,275 feet. Kern Mex Oil Fields, No. 6 El Barco, drilling in gray lime at 2,025 feet, while No. 7 has shut down temporarily in the same formation at 1,880 feet.

In the Marland Field, Cia. Pet. Franco Espanola, No. 16 Limon is drilling in lime and shale at 2,310 feet; No. 18, running 8-inch at 1,734 feet in gray lime, and No. 20, drilling in the same formation at 1,984 feet.

Other miscellaneous northern tests remain generally unchanged since the last report.

Strikes and Strikers

It appears as if the terminal strike at the Mexican Gulf Oil Co.'s terminals here, at the Corona Company's, and the threats against Transcontinental Petroleum Co. are getting passe. De jure they continue, but de facto they are passing out with, according to reports today, the better element of workmen returning to their posts. However, there is a possibility of other turns in the road yet for the syndicalists are rather strongly entrenched, particularly in the state of Vera Cruz, in which the terminals are situated.

CANADIAN FIELDS

(Continued from Page 40)

turn on the last boat coming up the Mackenzie River. No information has yet been made public as to oil or gas showings encountered, though in the discovery well close to this location several oil sands were met in the first 900 feet of drilling. The test will be resumed next season as it is planned to test thoroughly the deeper formations at this point. In the Sweetgrass Field, southern Alberta, Imperial Oil, Ltd.'s No. 2 at Dead Horse Coulee, north of the Rogers-Imperial gasser, has been drilling continuously since it was spudded in several weeks ago, the rotary outfit having made something better than 500 foot of hole. Canadian Oil & Refining Co. (Rogers-Imperial), Section 29-1-11w4, is shut down; but a shareholders meeting at Lethbridge recently, following the death of Mark C. Rogers, president of the company, decided to carry the test deeper.

Irma-Wainwright

In east-central Alberta, British Petroleum's No. 3, Section 29-45-6w4, in the Irma-Wainwright Field, which resumed work recently with a core drill, has penetrated another oil sand at 2,095 feet. The test has been drilled only 8 feet into this sand. British Petroleum's No. 4 is still flowing a little heavy crude after tubing with 2 inch. A heavy duty pumping plant to operate Nos. 2 and 4 wells is being shipped from Los Angeles and will be installed immediately it arrives for a definite capacity test. It is now estimated that No. 4 may make from 50 to 100 bbls. a day on the pupm. British Petroleum's No. 5 is rigging up. Samples of heavy crude from No. 4 have been shipped to the Imperial Oil, Ltd., plant at Calgary for testing.

Maple Leaf Oil & Gas Co.'s No. 1, Section 24-45-8w4 has been shut in. Later a flow line will be installed and the oil sands stirred up with gas pressure in an effort to induce oil production.

In Northern Alberta, Prairie Oils, Ltd., is preparing to shut down for the season at High Prairie, where a test has been drilling since early in the summer. No production has been reported, but work will be resumed in the spring.

The Day Syndicate of New York City is reported to have made a proposition to the Dominion Government for the development of tar sand deposits in the Athabaska district, provided a 20,000-acre concession can be secured.

Alberta Gas Survey

R. T. Elworthy and R. J. Offord of the Geological Survey of Canada has this season completed the survey of the gas fields of Alberta, begun last year. Outside the Bow Island Field, no helium gas in commercial quantities has been found in any of the wells, though tests of gas from the northern fields have yet to be made. A reported find of helium in the Coutts-Sweetgrass Field was found of no utility for commercial purposes. After completing his work in the southern fields, Dr. Elworthy visited the Peace River and Athabaska Fields, and samples of gas from these areas were shipped to Ottawa to be tested.

ROCKY MOUNTAIN AREA

(Continued from Page 40)

to handle our product. They are endeavoring to exploit our industry. We ask the Commission to protect us and the public against such exploitation."

Crude Runs for Week

Runs from the Rocky Mountain fields for the past week:

Salt Creek	68,720
Teapot	2,400
Big Muddy	3,530
Grass Creek	3,160
Elk Basin	1,020
Greybull	20
Rock River	3,270
Notches	670
Lance Creek	1,400
Rex Lake	40
Poison Spider	600
Osage	350
Hamilton Dome	520
Lander	300
Byron	80
Pilot Butte	70
Lost Soldier	6,010
Ferris	70
Cat Creek	3,935
Sunburst	5,380
Craig	1,180
Miscellaneous	650
Total	103,255

Mule Creek shut down for winter.

GULF COAST

(Continued from Page 38)

No. 6 there from 2,740 to 2,500 feet. The A. D. J. Co. is rigging No. 1 near Cactus, on the International & Great Northern Railway.

Rockdale-Minerva

In Milam County, F. A. Bartlett's No. 1 Coulter, 1 mile south of Rockdale, is credited with 50 bbls. initial output at 1,040 feet. Doctor Sessions' No. 4 Bauer is a 20-bbl. well flush production at 670 feet. The pay was found 30 feet deeper than in Nos. 1, 2, and 3. Brady Brothers' No. 1 Baldridge is a 12-bbl. well at 890 feet. Fallis and others' No. 1 Hollman showed some oil in a sand at 650 feet, but it was not tested. Crow is now drilling below 1,100 feet. The hole will be drilled to 3,500 feet.

Brady Brothers have a location for No. 2 Baldridge. Long & Co.'s No. 1 Lewis is around 655 feet. The Noack Oil Co.'s No. 1 Bowling, 1½ miles north of Rockdale, is drilling. Fritz Fuchs' No. 2 Brown is at 708 feet, 6 miles west of Rockdale. F. D. Tuttle's No. 1 Ashley, 6 miles north of Milano, is at 3,210 feet. The Sinclair Oil & Gas Co.'s No. 1 Smith has started drilling. J. C. Bland's deep test is shut down at 4,264 feet. It is 3 miles east of Hearne.

Gulf Coast Wildcats

The Sinclair Oil & Gas Co. abandoned No. 1 Perry on the south side of Stratton Ridge Dome, Brazoria County, at 2,544 feet. D. F. Ryan Production Co.'s No. 1 at Bryan Heights is cleaning out an old hole to deepen from 2,911 feet. The Texas Co. has a location at Clute.

At High Island Dome, in Galveston County, the Sun Oil Co.'s No. 1-C Cade is fishing at 4,650 feet. No. 7 Cade is drilling below 5,135 feet.

At Big Hill, in Jefferson County, the Houston Oil Co.'s No. 1 Gulf-Pipkin is below 2,870 feet, with No. 1 Sun-Pipkin at 2,550 feet. In Harris County, Wright and others' No. 1 Hunt, between Goose Creek and Barber Hill, on Cedar Bayou, is below 1,145 feet. The Dome Petroleum Co.'s No. 1 Schneier, on Buffalo Bayou, west of Houston, is below 870 feet. The Gulf Coast Development Co.'s No. 3 Vogel in Fort Bend County, is nearing 4,000

feet with nothing encouraging yet. The Humble Oil & Refining Co. is making formation tests around Boling Dome in Wharton County. The Gulf Production Co. has one rig running there. In Matagorda County, Kirk Hamill is rigging for a test 20 miles north of Bay City.

The Vanderbilt Petroleum Co.'s No. 1 Seliner, in Jackson County, is in gumbo around 2,300 feet. The Sun Oil Co. has a location north of Devers, in Liberty County. Other wildcats in that county are idle.

The Kyle Drilling Co.'s No. 1 at Cote Blanche, St. Mary's Parish, South Louisiana, is reported in a cap rock at 732 feet. Another location has been made.

Southwest Counties

In Atascosa County, De Lange, Eiser & Co.'s No. 2 Tom Ranch is idle after setting and cementing 6-inch casing at 3,120 feet. In Bexar County, T. B. Slick's No. 1 Lamm is below 2,900 feet. Ballard & Underwood's deep test in the Somerset Field is below 3,150 feet. The Good Oil Co. has started drilling 2 miles south of Adkins.

In Jim Hogg County, Henne, Winch & Fariss' No. 1 is still spraying about 50 bbls. of oil with the gas. It came in as a gasser two months ago. A 500-bbl. tanks has been set up on the lease. No. 2 is rigging and No. 3 is drilling around 1,985 feet. O. W. Killiam is rigging No. 1 in survey No. 255. The Simms Petroleum Co. is rigging No. 1 Hinnant. The Weber Oil Co. set casing at 2,780 feet in No. 4 Las Animas. The Humble Oil & Refining Co. is drilling formation tests on the East ranch with a light rotary gasoline-operated rig.

In Zapata County, the Mirando Oil Co.'s No. 15 is setting a liner to test at 1,910 feet. In Jim Wells County, the Simms Petroleum Co. has a location northwest of Sandia. Killiam and others set casing at 1,665 feet in No. 1, Survey No. 307. In Live Oak County, The Texas Co. is starting a series of formation tests north of Oakville. Its No. 1 Reagan, 2 miles north of Oakville, is below 1,510 feet.

In Brazos County, the Bryan Petroleum Co.'s No. 1 Wathuber, 2½ miles southeast of A. & M. College, is drilling below 825 feet. In Grimes County, McClausland and others' No. 1 Dodd is below 1,950 feet. It is 3 miles west of Iola. O. H. Powell & Co. have a location 2 miles southeast of Floresville, Wilson County. It will be drilled with cable tools.

The Grayburg Pipe Line Co., buyers of crude in the Somerset Field, has posted 85 cents for 25-gravity and below, with 95 cents for above 25 gravity.

KANSAS FIELDS

(Continued from Page 43.)

NE NE, Section 9-33-3. In the Rainbow Bend area proper, Waite Phillips and others' No. 1 Nelson, C SW SE NE, Section 20-33-3, made 1,286 bbls. the first 24 hours with best flow 1,497 bbls., sand 3,202-35 feet. Marland Oil & Gas Co. and Neely were building a rig for No. 1 Holt, NE cor. SE SE, Section 12-32-4. J. A. Hull's No. 1 Leimbrock, SE cor. SW NW, Section 24-32-4, was making 80 bbls. after starting off at 117 bbls. following a shot of 150 quarts in pay sand at 2,319-41 feet.

Montgomery County was still one of the busiest areas in the Mid-Continent. The Canary Oil & Gas Co.'s No. 1 Yoe, SW cor. SE SE, Section 31-34-15 ,which started off with 200 bbls. the first day from sand at 1,728-30 feet was making 200 bbls. on the pump, 50 per cent b. s. and water. The Consolidated Gas Co.'s No. 1 Yoe, SE cor. NW SE, same section, was abandoned as dry at 1,745 feet. Galbraith and others had a rig up for No. 1 Sloan, NW cor. NE, SW, Section 13-32-14. The Red Bank Oil Co.'s No. 2 Coleman, CWL SW SE, Section 28-32-14, was good for 400 bbls. from sand at 1,607-16 feet. The same company's No. 2 Love, CEL SE SW, same section, was a 150-bbl. well at 1,685-87 feet. The Elco Oil & Gas Co.'s No. 1 Good, NE cor. SE NE, Section 33-32-14, which started off with a flow of 500 bbls. the first 24 hours from sand at 1,708-16 feet was making 50 bbls. Homer Lamb's No. 2 Good, SE cor. NE NW, same section, made 420 bbls. the first day from sand at 1,705-11 feet. Canary and others had a machine for No. 1 Newall, NW cor. SE NW, Section 17-33-14. Mathews and others were shut down on top of the lime at 1,457 feet in No. 1 Brooks, C NW SW, Section 18-33-14. Vaniman and others were drilling at 1,500 feet in No. 1 Mason, C SW NW, Section 25-33-14, after reaching the top of the lime at 1,425 feet. H. K. Nelson and others had a machine for No. 1 Buster, SE cor. Section 25-34-14.

Greenwood County

Pryor & Lockhart had a rig up for No. 1 Davis, NW cor. NE SE, Section 13-22-11, in Greenwood County. The Phillips Petroleum Co. plugged back to 1,904 feet and shot sand at 1,877-1,904 feet with 95 quarts being rewarded with a flow estimated at 20 bbls. in No. 1 Cravett, SW cor. Section 22-22-11. The Mid-Kansas Oil & Gas Co. made a 250-bbl. well out of their No. 11 Martindale, SW cor. SE SW, Section 31-23-10, which was shot with 240 quarts in sand at 2,287-2,364 feet.

In Marion County, the Lee-Ward Petroleum Co. was drilling at 350 feet in its No. 1 Riggs, NE cor. SE SW, Section 31-20-4.

The new area in Russell County added disappointment in the test of Valarious and others at No. 1 Fairchild, SW cor. NE, Section 36-12-13, which was abandoned as dry at 3,603 feet.

MARLAND CONCESSION REPORTED IN MEXICO

NEW YORK, Oct. 20.—A petroleum concession reported granted in Mexico to the Compania Petrolera de Sonora, S. A., a subsidiary of the Marland, covers three zones. The first is located in Lower California, running from United States frontier to parallel 32; the second, south of the first, from parallel 28 to 27, and the third, located in district of Altar, Sonora, bounded on the north by the United States boundary, running west with the Rio Colorado, south to the territory of Lower California, and then running northeast past Cabota to the international line.

The concession is for three years, during which company must definitely select the lands it desires to exploit. Thereafter for a further period of three years it will have sole exploration rights. During the first three years the company must drill at least one well on each of the portion of land it intends to exploit definitely. Preliminary rental of 5 pesos per hectare a year is payable to the Government, which will also recive 10 per cent of value of total production.

OPINIONS DIVIDED ON NEW ZEALAND OIL

The warning by Mr. Massey concerning the prospects of oil getting at Taranaki, New Zealand, is all the more weighty because it is not that of a hostile critic but of a friend, says the London Oil News. As Prime Minister of New Zealand, Mr. Massey has every reason to encourage, and wish success to, petroleum prospecting in the Dominion: and the fact that he comes forward with his warning almost immediately on the formation of a $500,000 company to prospect and operate at Taranaki looks as though he feels it would be too great a responsibility to allow this Australian money to be spent fruitlessly without a protest. He has, at all events, pretty good opportunities to seeing such knowledge as is available concerning conditions; and he has indicated that he is not sanguine as to the result of operations. The New Zealand Government has spent a great deal of money in this locality without result. Mr. Massey quotes geological authority for the belief that any possible oilfield is probably destroyed as the result of volcanic action. On the other hand those backing the new company have the opinion of Dr. F. G. Clapp, a well-known American geologist, that their venture has at all events some chances in its favor.

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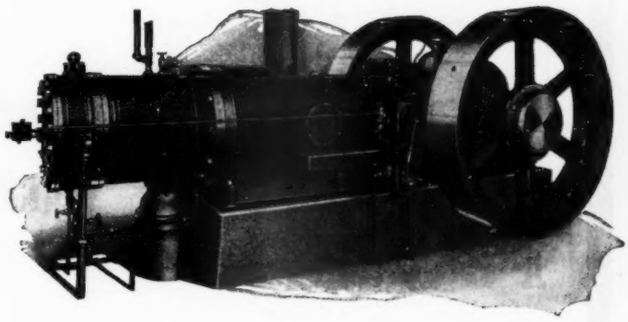

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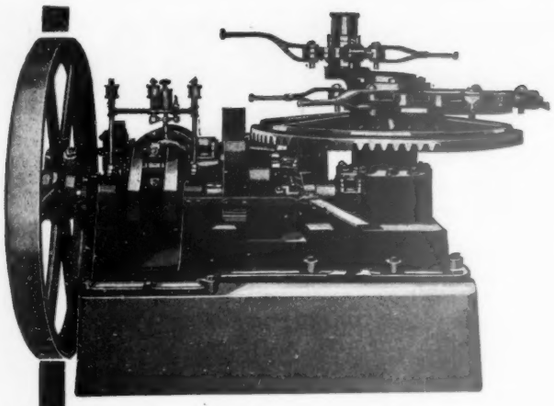

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PATTIN POWER

OBJECT TO ARBITRARY SPECIFICATIONS

(Continued from Page 86)

corrosion. It acts as an oxidizing agent in this work. The first work of this nature was done with chloride of lime or bleaching powder in 1804. Its first prominence was obtained in 1921 when the Midwest Refining Co. utilized bleaching powder for sweetening and desulphurizing its gasoline and natural gasoline blends. The problem of the utilization of cracked gasolines presented additional difficulties to refiners as the sulphur compounds in cracked gasolines differ widely from those in the straight run product. Cracked gasolines also were found to vary, in other ways, depending upon the crude and the charging stock.

Shortly after the discovery of the application of hypochlorite to the refinery work, it was found that hypochlorite of lime could be made at the plant from liquid chlorine and hydrated lime. The solution was found to be easy to handle and did not leave the heavy sludge discovered in using acid for the oxidizing work. Likewise it was claimed for it that the loss in using it was less than that found in using acid.

In the use of hypochlorite, the noxious sulphur compounds are oxidized, forming other compounds which are removed from the gasoline by water and an alkali wash. Among the sulphur compounds removed are the mercaptans alkyl sulphides, other sulphur derivatives and dissolved elementary sulphur. The treatment consists in six steps as follows: Initial caustic soda wash; water wash, first hypochlorite wash, second hypochlorite wash, final caustic soda wash and final water wash.

The initial caustic wash removes the hydrogen sulphide, sulphur dioxide and dissolves certain organic sulphur compounds, according to users. The successful operation of the process depends largely upon the quantity of the free alkali present in the oil. As a result the oil is washed by water to remove the alkali which would reduce the activity of the hypochlorite. Agitation is employed during washing with the hypochlorite solutions. The final soda wash is used to take out the acidic sulphur and chlorine containing bodies which have been oxidized but not removed by the hypochlorite. Experiments prove that each of the steps is necessary in the completion of the work. Several advantages over the acid-caustic treatment are claimed by the makers of the materials used in this method.

The removal of hydrogen sulphide is a very important item as this gas, if allowed to remain in the finished oil will break down, leaving free sulphur which will act as a corrosive agent when brought into contact with the copper parts of the automobile engine, stove or other parts of containers or mechanical equipment.

Use of Silica Gel

Silica gel, or highly porous beads of silica dioxide, has been used also for the removal of sulphur compounds from the lighter petroleum products. The silica gel is made by mixing sodium silicate and sulphuric acid, producing a jelly like mass called hydrogel. This material is broken up into small pieces and washed to remove the acid, after which it is dried, shrinking to 10 per cent of the original volume. It is then ready for activation to rid it of 41 per cent of its own weight of water which it then retains. Its absorption power depends upon this process of activation. For use with liquids, this gel must be pulverized to 200 mesh screen, fitting it for use in continuous oil filters. In the plants now in use, the gel and the distillate are brought into intimate contact, mixed and the gel is then separated by revolving the liquid mixture in large revolving drums. The liquid is thrown through the filter cloths in the drums and the gel is then scraped from the inside of the cloth. In contact, the gel and oil move countercurrent to each other, being mixed three times before the gel is discharged full of the impurities from the oil and the oil in turn is freed of all impurities. The gel is again activated after use, the work being done in two stages, the primary work driving the oil out of the pores and the secondary operation burning off the gum and oil residue adhering to the gel. The gel is thus restored to use and can be put through the plant successively for many times.

It is claimed that the work of the silica gel is accomplished as an act of selective absorption in which the sulphur compounds are taken from the crude distillates. The reaction is said to be a true physical phenomenon and leaves no products of a chemical reaction in the oil to be removed by later distillation. It is the claim of the makers of this material that treatment of cracked gasoline in particular by silica gel shows a much lower loss than the acid-caustic method.

Unsaturated Hydrocarbons

It is claimed that the acid treatment removes the unsaturated hydrocarbons from the cracked gasolines. Many chemists contend that these unsaturated hydrocarbons from a large proportion of the motor fuel produced in this manner and that they are beneficial. At any rate their removal causes a big shrinkage in the volume of the motor fuel. The low sulphur content gasolines require only a light acid treatment while the high sulphur content gasolines require a much heavier acid treatment, with a resulting loss in volume and damage to the product. This removal of unsaturated hydrocarbons and excessive treatment of high sulphur content gasolines for the production of refined oils is not considered necessary, although it has been common practice as a result of the requirements which refiners have been forced to meet.

Color is another matter which refiners contend is a purely arbitrary requirement. Many refiners claim that a yellow gasoline is just as good as a crystal white gasoline. They assert that it will develop just as much power and prove every bit as satisfactory as the more attractive motor fuel. They are particularly emphatic in their statements regarding filtering for color to produce lubricants.

"There is the same foolishness in filtering lubricants to get a certain color as there is in many of the requirements for gasolines and burning oils," one chemist declared. "If a refiner wants to get a certain color, he obtains the required viscosity and goes through the long filtering process, finally obtaining the required color, but with a loss in viscosity. Viscosity and volume of the oil are lost in filtering to obtain color requirements which actually mean nothing to the consumer. A man will pay a higher price for a lighter oil of the same viscosity which will be made as black as the darker lubricant 15 minutes after it is put into his engine crank case. He gets nothing but a little extra work in return for his extra payment."

As in the above instances cited for the purpose of bringing to mind many of the unnecessary requirements under which refiners are forced to operate, there are many specifications which could be eliminated. In other branches of the oil industry, simplification and standardization measures have been accomplished. The producing branch has had committees at work for many months and they have accomplished much toward lightening the work and speeding the operations in the field.

The same principles could be applied to the refining branch, many refiners contend, with the simplification of the present excessive list of necessary products and the requirements for the work of turning them out. Unnecessary designs for oil field equipment have been eliminated. Refiners feel that standardization could well continue, including their department of the oil business through eliminating many of the products and requirements which are unnecessary and discarding many of the old meaningless tests which create a complex situation in processing methods.

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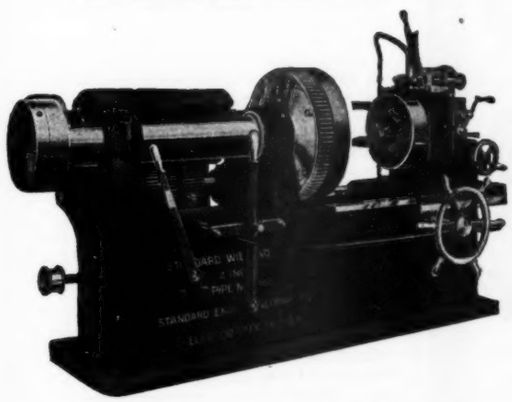

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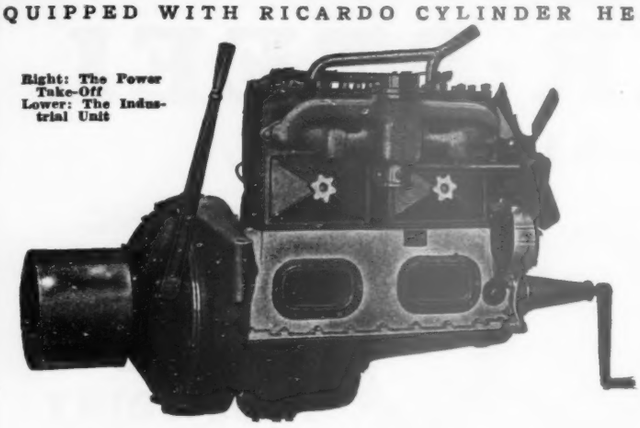

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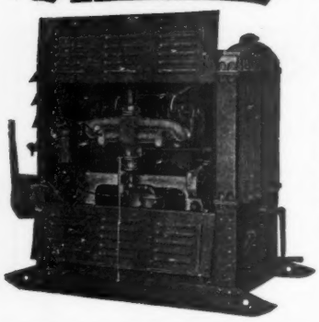

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SEEK SYNTHETIC GASOLINE HOPE WITHIN FIVE YEARS

(Continued from Page 82)

foreign oil fields. This they have done to an extent that makes them more nearly monopolistic of the world's future supply of petroleum and its products than any other country. Whatever may be said of their ethics in promoting their control of undeveloped petroleum deposits they must be credited with having proceeded on cold practical lines of endeavor. American efforts abroad have doubtless been less strenuous than they would have been had not there existed in this country and across the border in Mexico a vast supply of the most accessible petroleum products of the world.

Practical Achievements

During 1923 the statistics of the United States Bureau of Mines show that there were consumed in this country and by export approximately 7,500,000,000 gallons of gasoline. This total product, as difficult to realize in its vastness as are the distances of the fixed stars, has been made possible by scientific effort largely exerted by the United States Bureau of Mines and by the untiring energy and unbounding optimism of a great body of oil men who combine business ability with a daring spirit undaunted by hazards of every kind. The Government's scientific investigators in the early days of the oil industry were frequently characterized by oil men as visionary "highbrows" but they persisted in a spirit of firm conviction until they have been recognized the world over as the most practical body of scientists that ever tackled difficult problems.

Aside from numerous methods of conservation and efficiency in dealing with production, storage, refining and distribution of petroleum products, the minds of this band of investigators achieved the greatest success in an enlargement of motor fuel supplies for internal combustion engines by working along three lines of endeavor. First, the cracking process, second, making use of natural gas gasoline or casinghead gasoline and third raising the end point of gasoline to 437 degrees F., being 9 degrees increase, this increased temperature resulting in a less volatile product, being heavier and harder to vaporize but still satisfactory as a fuel for internal combustion engines.

In keeping with this modification of the gasoline end point the automobile manufacturers cooperated by making necessary modifications of their engines so that the heavier grade of gasoline might be successfully used in internal combustion engine equipment.

The first of the Burton patents adopted and utilized by the Standard Oil Co. of Indiana was issued in 1913 and this was augmented by additional patents by Doctor Burton and others, nearly all of which came into possession of the Indiana company. The amount of cracked gasoline produced may be roughly estimated as 20 per cent, that is 20 per cent of the gasoline in use during 1923 was cracked gasoline. The yield of gasoline in 1913 was somewhere around 15 per cent of the total amount of crude oil for the country as a whole. From 1918 to 1923 the gasoline production amounted to about 30 per cent of the total crude produced. Dr. E. W. Dean and H. H. Hill in 1920 estimated that the production of gasoline in the United States increased from a maximum of 7,000,000 bbls. in 1904 to approximately 85,000,000 bbls. in 1918 so that for the period from 1904 to 1918 the increase in the production of gasoline was approximately 12 times.

Factors in Increase

The factors accounting for that great increase are the additional quantities of crude oil handled by the refineries and the increase in the percentage of yield of gasoline itself from the crude.

Of course it must be remembered that from 1904 to 1918 the constantly mounting demand for this product fortified from year to year the efforts to treat as much crude oil as possible in the removal of the gasoline. It was estimated by Doctor Dean and Mr. Hill that, taking into account the whole United States production the yield of every barrel of gasoline of 42 gallons of crude has increased from 4.3 in 1904 to about 11 gallons in 1918. In 1923 the gasoline production averaged for every barrel of crude oil produced possibly 30 per cent. Casinghead gas amounts to 10 per cent of the present total gasoline supply. Doctor F. W. Lane and A. D. Bauer estimated in 1922 that at least 20 per cent of the motor fuel produced was the result of cracking stills.

The United States Geological Survey provides figures on which this estimate showing that casinghead gasoline amounts to 10 per cent of the gasoline supply of 1923. In 1922 natural gas gasoline plants, producing casinghead gasoline put out 506,000,000 gallons of gasoline. The average yield per 1,000 feet of gasoline run for 1922 was 0.93 gallons. That is, out of every 1,000 feet of natural gas there was obtained not quite one gallon of gasoline. The extraction of this gasoline does not materially affect the commercial use or value of the natural gas for the purposes for which it is used. The extraction of the gasoline removes only a trifling amount of the heating value, taking from it perhaps from one to two per cent and the extraction immaterially affects the commercial value of the natural gas when sold on a candle-power basis. O. B. Dow, associate chemist, who has just resigned from the United States Bureau of Mines to enter private employment, estimated that the loss of the natural gas by the extraction of the gasoline in B. T. U. value of heating content is generally so small as to require laboratory apparatus for its determination, thus the loss in heating value is almost negligible as is the loss

Increasing the End Point

The increase of the end point from 428 to 437 degrees F. was one of the latest practical methods for increasing the amount of gasoline that might be available for satisfactory operation in internal combustion engines. This change made in the Government specifications for the purchase of fuel gasoline was put into effect in November, 1919. The Government's specifications, issued primarily to guide purchasing officers of the Government in the selection of gasoline for Government use, have become nation-wide and even world-wide in the determination of standard gasoline products. As is well known this increase in the end point to 437 degrees F., means the limitation of the combustion point that may practically be adopted in reducing the volatility of the gasoline. This is done by the introduction into what was formerly designated as gasoline of the elements below gasoline in volatility, such as kerosene.

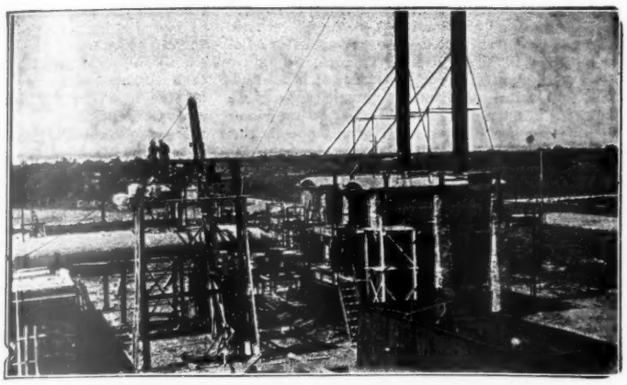
It was realized that the product that had previously appeared in the specifications of the Government as gasoline carried a volatility greater than was necessary for the internal combustion engine which practically relates to the engines of more than 15,000,000 motor cars of all classes registered in 1923. It was realized that the product was unnecessarily light and that it would be just as efficient with the introduction of some kerosene. Most careful experiments with automobiles were made to determine just how much kerosene might be introduced without affecting efficiency and 437 degrees F. was determined upon as a safe limit of the test that should be applied to the gasoline products.

Just how much increase in the total quantity of gasoline produced is involved in this increase in the temperature needed to explode the gasoline has never been determined because of the difficulty of estimating the nature of the many grades of crude oil treated from the various fields. That it is a very important addition to the quantity of commercial gasoline there is no doubt and it has helped materially in assisting the industry to keep pace with the mounting demand for gasoline to most of the needs of the motor industry.

Benzol and Alcohol

There has also been an augmentation in the quantity of motor fuel by the introduction of benzol, a by-product of coal. It is roughly estimated that in 10 years

(Continued on Page 128)



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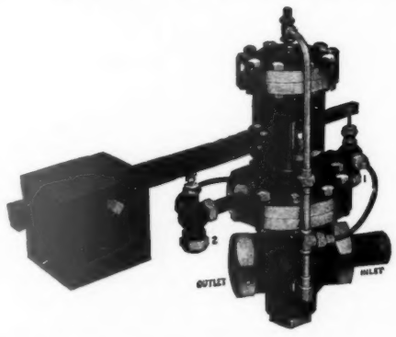

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PROVEN POOLS IN VENEZUELA GROW; PRESENT DAY OPERATIONS IN FIELD

By Michael O'Shaughnessy

Twice a week an old stern-wheel steamboat, similar to those seen on the Ohio River, leaves Maracaibo City for Encontrados on the Rio Catatumbo, where it connects with the railroad for La Fria in the State of Tachira, 90 miles on one of the most beautiful of lakes and 40 miles of gorgeous jungle scenery.

Twenty miles farther west on the same river, by smaller boat, brings one to the mouth of the Rio Tara, and about 20 miles down this stream, and a short distance to the east, is the Tara oil field. Continue farther westward 50 miles on the Rio Catatumbo and its affluent Rio de Oro, and just before reaching the Colombian border one comes upon the de Oro oil field.

The seepages upon which this drilling was done are the "oil springs" noted in the 1903 report of the United States Geological Survey. The General Asphalt and the Carib Syndicate were the pioneers in this section, and did a very considerable amount of work previous to 1914, when the Royal Dutch group took over the management of the Colon Development Co., Ltd., which owns the Vigas concession on the whole of the district of Colon, some 4,500,000 acres. The Carib Syndicate, control of which is under option of The Texas Co., still owns 25 per cent of the stock of this company; and the General Asphalt has an eighth royalty on the Royal Dutch 75 per cent of the oil. The result of development work here has been six failures and four producing wells, two in de Oro and two in the Tara fields, good for more than 1,000 bbls. each of light oil. Two wells are drilling in the Tara Field. No steps are being taken to ship this oil.

Approximately 140 miles to the northeast of the Tara Field are Concepcion and La Paz, which brings the number of proven pools west of Lake Maracaibo up to four. The small shallow producer (capped) at Petroleo, in northern Perija, can hardly be considered more than a very favorable indication of oil in commercial quantity in that section.

Concepcion Well

The country between Maracaibo City and Conception is sandy, as level as a billiard table, and covered with underbrush and stunted trees. The 27-kilometer distance is comfortably covered in a Ford in two hours. There are no surface indications here of petroliferous structures below. Notwithstanding this, the Concepcion well was one of the few in Venezuela located on geology. The datum was collected in a series of test pits 50 feet deep. The La Paz well, 18 miles farther west, was drilled on the edge of a spectacular seepage. These wells are in the district of Maracaibo, the concession on the whole of which belongs to the Venezuelan Oil Concessions, Ltd. This company also owns the concession on the entire district of Bolivar, east of the lake. The La Rosa Field is situated in that area.

The first two wells drilled in the district of Maracaibo were extraordinarily successful. La Paz was completed early in 1923, at a depth of 752 feet, good for 20,000 bbls. of 30 gravity oil. It was capped, awaiting transportation, but has flowed since at intervals at the above rate. The second well, P-4, is drilling here about one kilometer north of the discovery well which is now known as P-3. Location has been made for P-5. Immediately after the completion of P-3, drilling was started on a structure at Concepcion. Late in April the hole had reached a depth of 1,030 feet, seven sands had been tested and four found to be oil bearing. The deepest from 940 to 1,030 feet, produced 2,000 bbls. of 40 gravity oil in about eight hours. These sands were cased off and drilling continued at about 1,450 feet on September 1. On this date they were moving in on the second location, about one kilometer northeast of the discovery well. The Venezuela Oil Concessions, Ltd., has determined upon a very extensive drilling program in these two fields. Some idea of the extent and permanency of the improvements contemplated can be gained from the item of $270,000 appropriated to run a 4-inch pipe line from the Rio Palmer to Concepcion and La Paz to supply these camps with water. Pipe has been strung and is now being connected up for a 6-inch oil line from La Paz and Concepcion with 4-inch line from there to Punta Piedras, near Maracaibo City, where an extensive terminal and lake loading station will be built. Oil shipments will commence about January 1, next.

Urdaneta District

The rock folding in the Maracaibo Basin is in waves, so to speak, from the Andes Mountains to the lake, which is the bowl of the saucer. The strike at Concepcion and La Paz is north and south, from which fact the Urdaneta district lying immediately to the south of Concepcion and La Paz Fields is considered as particularly promising territory. Concessions on the whole of this district are owned by The Texas Co., Venezuelan Petroleum, Gulf, Pantepec, Standard Oil of New Jersey and Omnium Companies; the marine zone strip off shore by the Gulf and the adjacent bed of the lake concessions by Lago Petroleum.

North of Concepcion the Standard Oil Co. of New Jersey is starting to drill on a narrow concession at Palmarejo on the short of the lake. The marine zone strip of Lago on the east and The Texas Co. concession adjoining on the west will be affected by the result of this drilling.

Also the north of Concepcion the Caribbean Petroleum (Royal Dutch) has completed a gas well and is drilling a second hole at "Km 24." The Standard Oil Co. of New Jersey and The Texas Co. have holdings in the vicinity.

Farther west, also in the district of Mara and north of La Paz Field, the Gulf is drilling a deep test at Mene on a Maracaibo Oil Exploration concession. Acreage of the Oronoco held by Pure Oil Co. will be affected by the result of this development.

Still farther west and around Inciarte are perhaps the most spectacular seepages known. Some 10 years ago the Carribbean Petroleum drilled 10 shallow failures here and abandoned the concession. The Standard Oil Co. of New Jersey has taken it up, and this country is to have a test at depth.

New Port

The United Fruit Co. is negotiating with the Venezuelan Government for a concession looking toward the extension of its banana growing business to this section. While this has no direct bearing on the oil development, it would indirectly have a beneficial effect, in that a port would be developed on the coast north of the Maracaibo Straits, where the fruit company's boats would call on a regular schedule.

Lying to the south of the districts of Maracaibo and Urdaneta and north of Colon is the very extensive district of Perija, extending back from Lake Maracaibo to the Andes on the Colombian border. Some years ago the Caribbean Petroleum drilled six shallow exploratory holes in this area and got a showing of oil in the one at Petroleo in the extreme north. One well is drilling in this section at Punta Iguana on the lake shore by the Gulf, with the only diamond drill rig in the Venezuelan fields. Five additional wells are to be drilled in this section by the Gulf on its own extensive concessions and on the acreage of the Venezuelan Petroleum under drilling contract. In the southwestern corner of this district, about 70 miles from Punta Iguana, the Standard Oil Co. of New Jersey is completing 17 kilometers of narrow gaunge railroad from the Rio Santa Anna to Esperanza, where drilling will shortly commence on one of the concessions of the Maracaibo Oil Exploration Co. under drilling contract to the Standard Oil. The following companies own concessions in Perija, which

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will be affected by the results of development work in this district: Gulf, Pantepec, Caribbean Petroleum, Texas, Venezolana de Petroleo, Maracaibo, Oil Exploration, Standard Oil of New Jersey, New England Oil, Beacon-Sun, Venezuelan Petroleum and Lago Petroleum.

Petroleum Industry One of Railroads' Largest Shippers

By L. M. Fanning

In spite of the fact that the petroleum industry is a transporter in its own right, owning and maintaining some 65,000 miles of trunk and gathering pipe lines, it ranks as one of the leading railroad shippers. Crude oil is moved almost entirely by pipe line, being transported from the field to the refinery, where the manufacture of the finished products takes place. The distance that crude oil is piped varies greatly, according to the proximity of the refinery to the field. Some of it travels from the Mid Continent to refineries on the eastern seaboard, or well over 1,500 miles.

Crude oil is transported in tank cars by rail mainly in supplying smaller refineries which do not have pipe line facilities and also when a new field is opened up and pending the time that pipe lines can be built. In proportion to the entire movement of crude oil, the rail movement, as indicated, is small. A factor in addition to that of the pipe line in keeping down the rail tonnage is the tank steamer, and there is a steady and large carriage of crude oil by water from the Gulf Coast ports to the Atlantic.

Immense Tonnage of Oil

The petroleum industry could not function as it does today if it were dependent upon the railroads for the transportation of crude oil. Assuming, however, that pipe lines had failed to solve the problem and that the only recourse had been the railroad, the problem of supplying adequate equipment and of keeping the commodity flowing to the markets would have been one for the railroads of the country not even second to the problem of moving the vast annual tonnage of coal.

As it is, with crude oil transportation largely taken care of by the pipe line, the railroads carry an immense tonnage of oil in the character of refined products. The movement of oil products from the refinery after manufacture is entirely by rail except in the case of markets close to refineries which might be supplied by direct truck service. Differing from other shippers, the petroleum industry ships in its own tank cars or in cars rented from tank car companies and the railroads are thus not called upon to furnish the equipment.

Statistics published by the Interstate Commerce Commission covering the carload movement of tonnage originating on Class I roads, that is, roads having operating revenues above $1,000,000, show that refined petroleum and products rank first among manufactures shipped on these roads. Refined petroleum moved in 1923 aggregated 36,401,305 tons and crude petroleum, 8,335,653 tons, a total movement of oil by rail over these lines of 44,736,958 tons. A comparison of this total with some of the other principal commodities carried is interesting.

Heavier Than Wheat

The railroads carried 84,864,643 tons of anthracite coal and 358,870,454 tons of bituminous. Clay, gravel sand and stone shipments were 133,984,812 tons; iron ore, 77,816,342 tons. Petroleum tonnage, however, is heavier than wheat which totaled 23,095,399, than corn, 15,174,321 tons, and than all animals and animal products, totaling 28,237,497 tons. Shipments of all products of agriculture and of all products of forests range only 60 per cent heavier than those of petroleum.

In 1923 the total traffic on these roads amounted to 1,233,005,049 tons, petroleum supplying 3.6 per cent. The fol-

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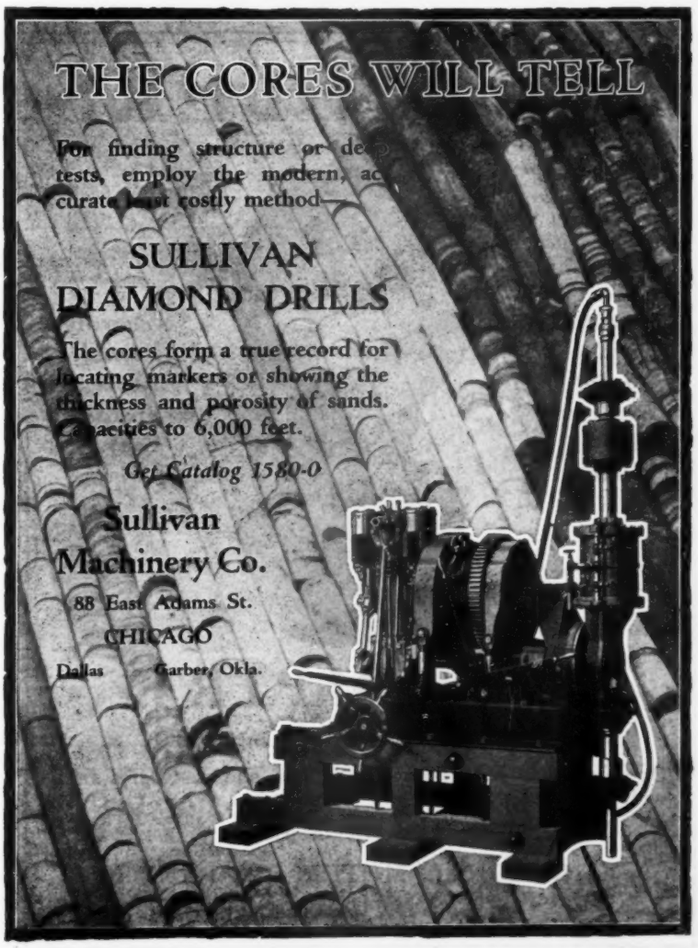

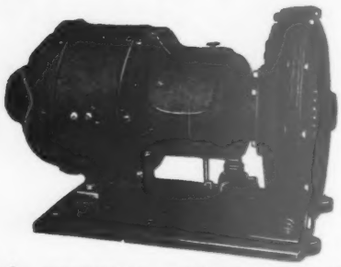

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lowing shows petroleum tonnage originating on Class I roads in 1922 and 1923:

Year	Crude petroleum (Tons)	Refined petroleum (Tons)	Total petroleum (Tons)
1922..	5,935,997	30,863,324	36,799,321
1923..	8,325,653	36,401,305	44,736,958

Shipped 315,000,000 Bbls.

Converting the tonnage figures into barrels by using railroad equivalent which figure out 6.4 bbls. to the ton for crude petroleum and 7.2 bbls. to the ton for refined petroleum, it is shown that the industry shipped 53,348,179 bbls. of crude oil by rail in 1923, compared with 37,990,381 bbls. in 1922, and 262,089,396 bbls. of refined products, compared with 222,215,933 bbls. in 1922. Total shipments of petroleum, crude and refined, in 1923 on a barrelage basis were 315,437,575, compared with 260,206,314 bbls. in 1922, an increase for last year of 55,231,261 bbls. or 21.2 per cent.

During the first quarter of 1924, conversion of the tonnage figures, shows a movement of crude petroleum amounting to 11,738,496 bbls., compared with 11,556,634 bbls. during the first quarter of 1923. Shipments of refined petroleum were 63,535,457 bbl., compared with 56,778,142 bbls. Total shipments of petroleum during the first quarter were 75,273,953 bbls., compared with 68,334,776 bbls. during the first quarter of 1923, or an increase for this year's period of 6,939,177 bbls., or 10 per cent.

Carload Shipments

Comparison of carload shipments of principal manufactured goods originating on Class I roads in 1923 and 1922, showing refined petroleum and products ranking first in tonnage follows:

	Tons 1923	Tons 1922
Refined petroleum and products	36,401,305	30,863,324
*Bar and sheet iron structural steel and iron pipe	29,964,965	22,168,863
Cement	21,108,633	18,464,450
Brick and artificial stone	18,793,112	15,606,849
Iron, pig and bloom.	14,948,481	9,991,387
Chemicals and explosives	8,755,846	7,536,197
Fertilizers	7,641,306	6,817,946
Automobiles and autotrucks	2,596,205	4,159,911

*Other metals, pig, bar and sheet, not included, total 5,294,261 tons.

The petroleum industry is responsible for a heavy rail tonnage in addition to being a direct shipper. Taking the list of manufactures itemized above, it is noteworthy that as a purchaser the oil industry contributes largely to rail revenue in buying of structural steel and iron pipe, cement, brick, chemicals and automobiles.

EASTERN PIPE LINE SEPTEMBER REPORT

Receipts of crude petroleum from the wells by the pipe lines of the Eastern division during the month of September amounted to 1,887,899 bbls. which is a daily average of 62,930 bbls. This represents an increase of 29,682 bbls. in the total and a gain of 2,988 bbls. in the daily average when the figures are compared with those for the previous month. August. The daily average is 9,428 bbls. less than the receipts by the same pipe line in September, 1923.

The deliveries of crude oil during September by the pipe lines of the Eastern division aggregated 3,819,751 bbls. which is a gain of 3,034 bbls. compared with the August total. The daily average deliveries for the month of September were 127,325 bbls., an increase of 4,205 bbls. The daily average shipments were 9,941 bbls. less than they were for September, 1923.

During September, the runs of oil from the Illinois Field by the Illinois Pipe Line Co. and the Tide Water Pipe Co. amounted to 714,875 bbls., the daily average being 23,829 bbls. This is a decrease of 5,583 bbls. in the total compared with the previous month. Deliveries of oil during September from the Illinois Field totaled 535,763 bbls., the daily average being 17,859 bbls. This is an increase of 16,427 bbls. in the total as compared with the previous month.

For the first time since March the amount of crude oil held in storage by the pipe lines of the Eastern division decreased during the past month. The de-

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Every time a Norris Brothers Clutch - Type Standing Valve Puller is used it saves an extra run of the rods. The first run so saved more than pays for the tool and a Norris is good for hundreds of runs. Figure it out for yourself—where else can you make an investment that will give you greater returns?

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crease is very small, however, amounting to only 14,840 bbls. The amount of crude oil held in storage by these pipe lines at the close of September was 12,206,836 bbls. The amount of Pennsylvania oil in storage increased 205,810 bbls. during the months, there was an increase of 62,789 bbls. in Lima oil stored, and a gain of 51,058 bbls. in the Kentucky ngures. The amount of Mid-Continent oil in storage decreased 273,470 bbls. and there was a decline of 61,026 bbls. in the Illinois figures.

EMPIRE NOW BUYING KANSAS ROYALTY OIL

The Empire Petroleum Co., a subsidiary of the Empire companies, has announced that effective October 16 it will purchase all the royalty oil from leases in Kansas. A copy of the letter which has been sent out by the Empire, follows:

"Beginning October 16, 1924, the Empire Petroleum Co. will purchase and pay for 100 per cent of the royalty oil from leases in Kansas which may on that date be connected to lines of the Empire Pipe Line Co.

"The company is not at this time exercising its option to buy crude held in storage."

The Empire's storage order was issued early in July. At that time this company began purchasing and paying for 50 per cent of the royalty oil. The recent action of the Empire is in line with the practice being followed by a number of other purchasers in Kansas.

STORAGE IN TRANSIT HEARING NOVEMBER 19

The storage in transit question, awaited for many months by Mid-Continent companies and fostered by the Purchasing Agents Association of Tulsa, has been set for hearing at 10 o'clock on November 19, in the city hall auditorium, Tulsa. The case is styled as the complaint of the Western Petroleum Refiners Association and others vs. St. Louis, San Francisco Railway Co. and others, I. C. C. docket No. 16128, which requests the establishment of a storage-in-transit privilege on iron and steel pipe and fittings at St. Louis, Mo., affecting shipments from points east of the Mississippi River to destinations in the States of Kansas, Oklahoma, Texas, Louisiana and Arkansas. The case includes the protection of the through rates from points of origin to final destination.

SINCLAIR-SEABOARD DEAL

A one-year contract is reported made by the Mexican Seaboard Oil Co. to sell to Sinclair Oil Co. 10,000 bbls. daily of Panuco crude at 79 cents a barrel at the well. Production will come from Seaboard's Cacalilao properties. This price is considerably better than that obtained some months ago for the same amount of crude, the price of this oil being said to have been 65 cents a barrel, at the well. Heavy demand for fuel oil is stiffening the price on heavy Mexican crude which is particularly suitable for fuel oil recovery.

CITY INSTALLS TANK

The City of Berkeley, Cal., by action of the City Council, is authorized to install gasoline equipment for furnishing municipal motor vehicles with gasoline. A large gasoline tank and pump are being installed at the corporation yards, at a cost of $1,250, and in the future all city-owned trucks, tractors and automobiles will be supplied with gasoline purchased in wholesale quantities. According to City Manager Edy, the city will save some money during the year in the purchase of gasoline supplies in large quantities.

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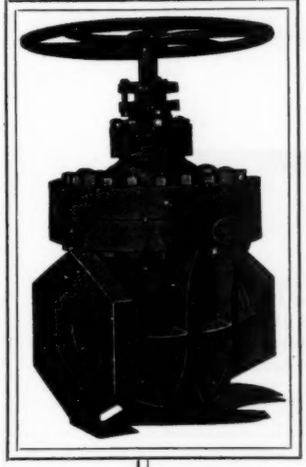

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WHO'S WHO IN PIPE LINE TRANSPORTATION

(Continued from Page 28)

interest in the Sinclair lines. Adding this mileage to the above amount gives a total of over 53,000 miles of pipe line—or 65 per cent of the total pipe line mileage of the United States.

As pipe line are merely feeders for refineries, it is only natural that great Standard refining companies would result from this marvelous transportation system—and four are outstanding:

Standard of New Jersey.
Standard of New York.
Standard of Indiana.
Standard of California.

The Standard of New Jersey has as its pipe line subsidiaries:

	Miles.
Imperial Pipe Line Co., Ltd.	179
Tuscarora Pipe Line Co.	597
Humble Pipe Line Co.	1,580
Oklahoma Pipe Line Co.	1,238
Standard Pipe Line Co., Inc.	3,036
Total	6,628

The Imperial pipe line supplies the 12,000 bbl. Imperial (Standard) refinery at Sarnia, Ontario, Canada. The Tuscarora line bring Appalachian crude to the Bayonne refinery. The Humble Oil & Refining Co. is one among the largest producers of crude oil in the Mid Continent and its 1,580 miles of pipe lines collect crude from the Burkburnett and Ranger areas, supply their four Texas refineries and end at the Baytown refinery on the Houston ship channel.

The Oklahoma line, with 1,236 miles, taps Kansas and Oklahoma, while the Standard Line, with 3,036 miles, taps Arkansas and northern Louisiana, ending at the 80,000-bbl. refinery at Baton Rouge.

Thus the Standard of New Jersey with 12 refineries, 348,000 bbls. of daily refining capacity and 6,628 miles of pipe line occupies a very secure as well as very powerful position in the industry.

The Magnolia Pipe Line Co. is the transportation end of the Magnolia Petroleum Co., which is one among the large producers of crude oil in Texas and is a subsidiary of the Standard of New York. Its 2,851 miles of line supply the five Magnolia refineries in Texas and end at the 40,000-bbl. plant at Beaumont.

Indiana Company

The Standard of Indiana owns the Midwest Refining Co. with about 300 miles of trunk line in the Salt Creek Field—and a small mileage in two other Wyoming fields. It owns a half interest in the 5,732 miles of Sinclair line of which 720 miles connect Salt Creek with the main trunk line at Freeman, Mo., and make Salt Creek crude directly available for their Kansas City, Sugar Creek, East Chicago and Whiting refineries and, through Standard pipe line connections, for any other desired point between the Mississippi and the Atlantic seaboard. Or, if necessity requires, the oil can be sent south from Freeman, Mo., through the Sinclair line to the Gulf—as was recently done. The eight refineries, 169,500 bbls. of daily refining capacity and use of 6,000 miles of pipe line give the Standard of Indiana a very strong industrial position.

Careful estimates indicate that the Standard of California has at least 1,200 miles of pipe line and an investment of about $25,000,000. Its earlier pipe line construction connected up the San Joaquin Valley production with its 100,000-bbl. refinery at Point Richmond, while the recent Los Angeles Basin development called for a large investment in pipe lines and storage for the 100,000-bbl. refinery at El Segundo.

In comparing these four powerful units of the Standard group one notes striking similarities and differences. The New Jersey, New York and California companies are on the seaboard, each has large pipe line capacity, large refining capacity and both domestic and foreign trade. On the other hand the Standard of Indiana is an "inland" company, with large pipe line capacity, large refining capacity and an enormous market in the

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eleven States usually referred to as its "assigned" territory.

Sinclair Purchase

Originally a refining and marketing company, it enlarged its refining through its acquisition of the Midwest Refining Co. and acquired the much-needed pipe line facilities through the purchase of a half-interest in the Sinclair lines. Thus, in recent years, the Standard of Indiana has "rounded out" into a complete and very powerful unit.

Except for the Imperial and the Tuscarora lines, which are owned by the Standard of New Jersey, there is every indication that the other 11 Standard pipe line companies east of the Mississippi, will remain pipe line companies exclusively, with no crude oil production and no refining.

When the Standard of New Jersey "reached over" into the Mid-Continent and acquired both production and pipe lines through the Humble Oil & Refining Co., the Humble Pipe Line Co., the Oklahoma Pipe Line Co. and the Standard Pipe Line Co., Inc.—and when the Standard of New York reached over into the Mid-Continent and acquired both production and pipe lines through the Magnolia Petroleum Co. and the Magnolia Pipe Line Co.—and when the Standard of Indiana reached over into the Mid Continent and acquired pipe lines and the assurance of a supply of crude through the Sinclair Pipe Line Co. and reached over into Wyoming and secured refineries through the Midwest and pipe lines through Sinclair, it would appear that the recent acquisition of the Producers & Refiners by the Prairie was a move along the same "rounding out" line that is being slowly worked out by these industrial giants.

Leading Independents

East of the Mississippi the Tide Water Pipe Line Co. is the largest "independent" transporter of crude oil, with the Pure Oil Co. next although part of its pipe line mileage is in Texas, and was acquired by the recent purchase of the Humphrey's interests. The Paragon line runs from Cygnet to the refinery in Toledo, Ohio—the total lines are about 237 miles. The total of the Sun Oil Co. lines in the eastern area and the Mid-Continent is about 500 miles.

There are numerous small independent pipe line companies east of the Mississippi, but their aggregate mileage is extremely small compared with the 26,000 miles of Standard lines.

The seven Mid-Continent independents total over 9,000 miles—against 19,000 miles owned by Standard companies and to which can be added the 5,000 miles owned equally by Sinclair and the Standard of Indiana.

As there are 41,000 miles of line in the Mid-Continent and Gulf Coast, and as the Standard of New Jersey, Standard of New York, Prairie, Standard of Indiana, Sinclair and seven independents own over 33,000 miles it very obviously follows that the remaining 8,000 miles is owned by a number of small companies.

Out of 35,200 miles of pipe line east of the Mississippi the Standard lines total 26,400 miles, or 75 per cent. Out of 41,000 miles in the Mid-Continent and Gulf Coast the Standard and Sinclair lines total 24,500 miles, or 60 per cent.

Gulf and Texas Lines

In the Mid-Continent, the Gulf Pipe Line Co. and the Texas Pipe Line Co. are the outstanding independent transporters of crude oil. The flow of oil of both companies, however, is to their big refineries at Port Arthur—The Texas Co.'s 45,000-bbl. plant and the Gulf Co.'s 100,000-bbl. plant, both on tidewater, with tanker transportation all over the world.

The Ozark pipe line carries Oklahoma crude to the Roxana (Dutch-Shell's) 30,000-bbl. refinery at Wood River, Ill.

The network of Cosden pipe lines carries Oklahoma crude to its 35,000-bbl. refinery in West Tulsa.

The Empire pipe lines deliver Kansas and Oklahoma crude to their refineries in Kansas, Oklahoma and north Texas.

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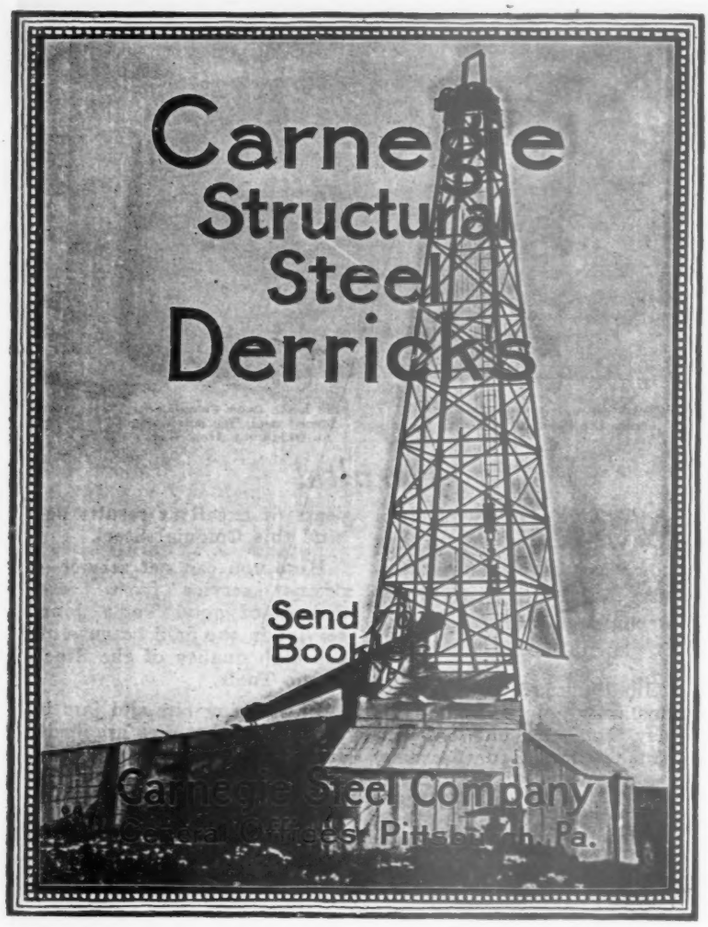

Standard and Sinclair refineries flows out of the Mid-Continent by pipe line to refineries in Kansas City, Sugar Creek Wood River, East Chicago, Whiting and the East or to refineries in the south, principally on the Gulf Coast.

Rocky Mountain Lines

In the Rocky Mountain area there is not the great interfield pipe line system that characterizes the Mid-Continent and the Eastern area, and outside of the Salt Creek Field which represents three-fourths of the total Rocky Mountain production the pipe lines are few and short. The Midwest lines from Salt Creek to Casper and the 720-mile Sinclair line from Salt Creek to Freeman, Mo., are the dominating factors in this great producing area, while the Illinois Pipe Line Co. is the dominating factor in the fields scattered throughout the State. Wyoming has less than 1,500 miles of pipe line.

In Montana, the production of the Cat Creek Field is largely handled by the Mutual Oil Co.'s lines while the Kevin-Sunburst Field is largely handled by the Illinois Pipe Line Co. The production of each field has recently ranged around 4,000 to 5,000 bbls. a day. The entire State is credited with 113 miles of line. In Table 2 the 377 miles credited to Nebraska is that part of the Sinclair line lying within the State.

California's System

California contains over 4,500 miles of oil pipe line of which the Standard of California has about 1,200 miles and the four large independents about 2,400 miles, leaving about 900 miles between the small companies, most of whose lines have been built within the last year or two.

In the sense of a rounded out unit with a large domestic and foreign trade the Standard of California is easily the dominant figure in the Pacific Coast oil situation. However, in this area, the great bulk of the producing, transporting, refining and marketing is probably more evenly distributed than in the Rocky Mountain area, the Mid-Continent or the East.

The figures for some of the 16 independent companies are estimates as to their present mileage, with no recent figures available for their investments. While about 17,000 miles is reasonably close to the aggregate mileage of those 16 companies, the total investment, $120,000,000, is obviously too smalll as no amounts are entered for eight of the companies which represent about 4,800 out of the 17,000 miles. It is altogether probable that the 70,000 miles of these 33 companies represent an investment of at least $600,000,000, while the remaining 12,000 miles, built by a large number of small companies, represent on investment of probably $150,000,000—or a total investment of $750,000,000 for the 82,000 miles of pipe line in the United States.

Summarizing tables 1 and 2 we get an interesting sidelight on "Who's Who" in the pipe line transportation of crude oil:

Area—	Sixteen Standard and Sinclair	Sixteen independents	Other independents	All lines
East	26,397	5,176	3,622	35,196
Mid-Continent	24,488	9,237	7,362	41,087
Rocky Mtn. ..	1,497	22	492	2,011
Pacific Coast..	1,200	2,435	904	4,539
	53,582	16,870	12,380	82,832

In the assembling of statistics which reveal so obviously the grouping in the hands of a relatively few companies, of the great bulk of the mileage of so important an industrial factor as the crude oil transportation system of the United States, one must look past the bare figures—if they are to read aright, and constructively, the real story of our pipe lines.

For almost the first 40 years of its history the Standard concentrated on the building of pipe lines and refineries, leaving the production of crude oil almost entirely to others. And the result of that early policy is reflected by the fact that today the Standard companies and Sinclair own about 65 per cent of the pipe lines of the United States, 16 independents own about 20 per cent and

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the remaining independents own the other 15 per cent.

TABLE 2—TOTAL PIPE LINE MILEAGE OF THE UNITED STATES

Area—	State	Total Mileage
East	New York	1,879
	Pennsylvania .	11,368
	New Jersey ..	476
	Maryland	36
	West Virginia	5,376
	Ohio	8,815
	Indiana	1,972
	Illinois	3,155
	Michigan	138
	Kentucky	1,975
	Tennessee	5
		35,195
Mid-Continent and Gulf Coast	Kansas	5,304
	Oklahoma	17,384
	Texas	12,044
	Arkansas	1,236
	Louisiana	2,557
	Missouri	2,485
	Iowa	77
		41,087
RockyMountain	Colorado	29
	Montana	113
	Wyoming ...	1,492
	Nebraska	377
		2,011
Pacific Coast	California	4,539
Total		82,832

CHICKASHA-CEMENT SURVEY IN PROGRESS

CHICKASHA, Okla., Oct. 18.—With the great gas field area southwest of Chickasha having failed to produce more than occasional showings of oil, and the Cement Field, in the same district, a few miles northwest of the gas area, showing only small wells, the search is turning to a wider circle of operations.

Territory between Chickasha and Cement is being given a thorough geologizing, with a view to starting operations. This area lies to the north and a little east of Cement, southwest of the town of Laverty, near which point 15 years ago, a shallow test was drilled by a number of Chickasha men. This test was drilled around 1,800 feet deep and was stopped when the finances of the company became exhausted.

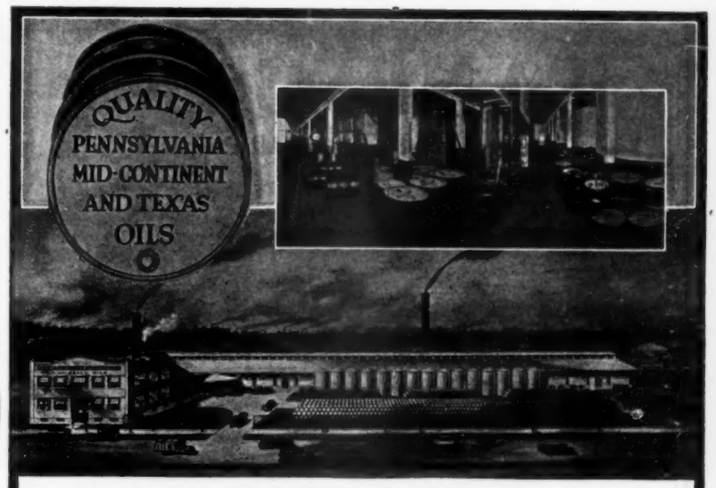
Production in the Cement Field, while not large, is lasting, the wells holding up a steady production for years. The belief has been expressed that the Cement Field is in some way connected with a great pool of oil which is feeding it. To the southeast of the Cement Field is the Chickasha gas area, which is well defined, and where several deep wells along the edges of the main body of the producing area have failed to produce oil.

Starting west of the Cement production and extending along the southern edge of the Cement productive area in a southeastern direction to a point south of the Chickasha gas area, is a string of dry holes, some of them deep.

Since the discovery of the Cement Field operators have been confining their work to the main structure in an effort to determine the southern extent of production, resulting after several years of work in the string of dry holes. Some 6 miles north and slightly east of Cement, a well was drilled with only a showing. On a line between Chickasha and Cement, 4 or 5 miles from Cement, a well was drilled with several showings, but not of a sufficient quantity to pay.

TORONTO TO SELL GASOLINE

TORONTO, Ont., Oct. 18.—If the Board of Control finds the city has the necessary legal authority, Toronto may engage in the gasoline business. Alderman Claude Pearce assured the board that he was in a position to lay down gasoline in Toronto, with all charges paid, at a price of 14½ cents to 16 cents per Imperial gallon. He suggested that the city sell the gasoline to independent dealers, who would thus be in a position to break the "ring" which he charged existed.



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Eotvos Torsional Balance Is Rapidly Gaining Prominence

By Charles E. Kern

WASHINGTON, D. C., Oct. 20.—The Eotvos torsional balance is constantly coming into prominence in the oil industry as an instrument to assist in the scientific determination of the presence of petroleum in the ground. For some reason the oil companies that have experimented with this instrument have not given any wide publication to their opinion of it or the results that have been accomplished by its use. It is known that the Marland Oil Co., Rycade Petroleum Corp., and the Amerada Petroleum Corp., have been very much interested in this instrument, all of which is causing additional inquiries from producers looking to its use.

Recently P. L. McGreal reported in The Oil and Gas Journal that the Rycade Petroleum Corp. had for the first time proved the correctness of the Eotvos torsional balance, in Brazoria County, Texas, where salt areas are located and where an effort is under way for tests of the oil sands supposed to be adjacent.

The only indication in Government records here to show where these instruments may be obtained refers to Ferdinand Suss, of Budapest, Hungary. His local address is Csorfz Utca 39.

Geologists of the Government have been carefully watching all references to trial of this instrument. These petroleum geologists have always been rather skeptical in respect to the practical utility of any instrumental method for determining the presence of petroleum in the ground. Magnetic ores may be so located, and have been for many years, but the extension of such methods to other minerals has met skepticism. It now appears that the Eotvos torsional balance has in many quarters overcome this skepticism and is being recognized as a thoroughly scientific instrument and method. The tremendous value of such an instrument in wildcat oil territory is recognized and even in proven territory its value in determining the extent of oil pools is regarded as very great.

The Eotvos torsional balance takes its name from the late Baron Lorand Eotvos, professor of physics at the University of Budapest, Hungary, and it was described by him almost 30 years ago. It is only another example of a good idea that was allowed to lie dormant a whole generation before business men took hold of it and undertook to determine its worth by practical experiment. If it now proves as efficient in doing its work as its advocates claim it will seem little less than the irony of fate that it has been unused during a third of a century when the great oil fields of the world were being investigated and located.

Since its original introduction much has been done to adapt this apparatus for practical use. Unlike the oil finders that have floated around the oil fields and known as "doodle bugs" there is no mystery or secret in respect to the Eotvos torsional balance. It may truly be recognized as a thoroughly scientific instrument. It measures the extremely small changes in gravity caused by the lighter or heavier masses in the earth's crust. It is so sensitive that it makes possible the measuring of differences of the force of gravity with an accuracy exceeding many thousand times that of the most exact analytical scales.

Emanuel Wagoner, mechanical engineer of Tokod, Hungary, in describing this instrument says it is identical with the torsional balance first used by Coulomb to investigate the laws of static electricity.

"This balance," says Mr. Wagner, "has been changed by Eotvos and has been altered so as to measure changes of gravity caused by subterranean masses of greater or smaller specific gravity and has been perfected from a laboratory in-

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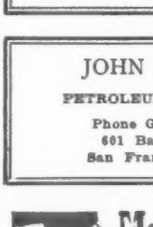

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strument to an apparatus that may be used anywhere in the field."

The force of gravity is nearly constant on our globe but it changes with geographical altitude and with elevation above sea level. Minute changes may be caused by heavier or lighter bodies in the soil and the Eotvos torsional balance detects these changes with an exactness unapproached by any other method. This illustrates how this instrument can detect the presence of large bodies of oil below the surface of the earth. It may as well be understood, however, that a knowledge of geology as applied to the territory under investigation is absolutely necessary for successful experimentation. The balance is not a fool-proof instrument that any one can use with profit. Changes in magnetism must also be calculated in connection with the use of the balance.

It should be understood that there is not any witch stick taint attached to the Eotvos torsional balance. It is based on scientific principles, all of which are well known to the geologist. A knowledge of the higher mathematics is necessary to fully understand the practical working of this instrument. Probably more attention is being given to this instrument in connection with the heavier minerals than to the discovery of petroleum deposits. In Hungary it was used by the Government in the location of salt deposits. Here the salt deposit is located as a guide toward the oil sands.

The slowness in the practical development of the Eotvos torsional balance in the United States suggests a governmental function that might well be instituted for the good of industry and the country at large. The United States Bureau of Standard is engaged in much research work, upon which inventors are enabled to base their judgment and in that way the government is actually assisting invention. The United States Bureau of Mines, also a depository of scientific development, aids the oil industry in a very practical way by advice, and by experimental work. As a rule both of these bureaus, engaged upon many petroleum problems, are determining various factors that touch not only every branch of the petroleum industry but many branches of industry that use petroleum, both as fuel and for lubrication. The tendency towards experiment to determine unknown factors has been increasing in recent years, but neither of these bureaus is authorized to assist the inventor in the perfection of his ideas. The Rittman cracking process was one instance in which the Government did back up a definite line of invention with the purpose of making its efforts useful to refiners everywhere, but with no success. Experimental stations have followed along that line especially in the work being done at Pittsburgh, Pa., to devise methods of treating oil shale, which is a preparation against the day when oil production dwindles to a point where the mining and treatment of shale may become profitable because of high prices.

But the inventor cannot carry his ideas to any governmental bureau to get assistance in perfecting them. To do this has been considered impractical up to this time. There would be such a horde of inventors that the machinery for carrying out such a purpose would be so vast as to make it futile to attempt a struggle with the thousands of problems that would be brought forth. The inventor is often a very impractical and visionary person, frequently with ideas that appear to be opposed to all the laws of nature. To open the doors to every one would be to enter upon an interminable task.

However, the Eotvos torsional balance is one of the kind of inventions so eminently valuable as to warrant governmental assistance. If the Government had been willing to develop that invention 30 years ago, selecting it as especially useful to the whole Nation, there might have been a saving of untold millions by the avoidance of dry holes and the guidance given to oil producers to productive fields with very small expense.

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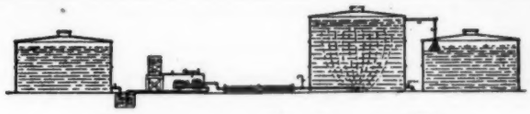

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SEEK SYNTHETIC GASOLINE HOPE WITHIN FIVE YEARS

(Continued from Page 116)

the coal power industry will increase the production of benzol to the extent of 250,000,000 gallons a year. This is only 6 or 7 per cent of the country's total motor fuel requirements but it is important in assisting the industry to meet requirements especially as the introduction of benzol is credited with the production of a superior gasoline.

Of course, with any important increase in the price of gasoline, alcohol would doubtless be introduced as an efficient adulteration for gasoline and it is alcohol that has been so used more effectively than any other product by the French Government for increasing the quantity of motor spirits available in that country as well as a means for marketing the excess alcohol produced by the French wine industry.

Every importer of gasoline in France must mix with this product a prescribed quantity of alcohol. So large a demand for alcohol was created in France by this law that to comply with the requirement it became necessary to import alcohol, which condition nullified to the extent of the importation, the purpose of the law. That purpose was to limit importation as well as to provide a market for excess products of alcohol to assist the wine industry.

The American oil industry from a national point of view has not been as greatly alarmed over the threatened exhaustion of liquid petroleum from the oil sands as some other countries would expect, because against that day there exists that which for all practical purposes may be regarded as an inexhaustible supply of petroleum from oil shale. The exact amount of oil that may be obtained from the mountains of oil shale in our western domain is not known, but roughly speaking it is believed to be capable of yielding perhaps three times as much fuel oil and gasoline as will the entire petroleum deposits from the oil sands of the United States from the time the Drake well was drilled until this liquid petroleum shall be exhausted. That is a subject so large as to be referred to only briefly in this connection. It is a reason, however, why American petroleum engineers and technologists have not been driven into the ephemeral realms of experiments for a synthetic gasoline.

Composition of Gasoline

When these petroleum technologists approach the subject of synthetic gasoline they are still confronted with the question relating to the exact nature of this product. They know that gasoline is a mixture of hydrocarbons belonging to several different series, but they are all combinations of hydrocarbons plus some components such as sulphur, nitrogen and oxygen, these last three components amount to very little. Many scientists, through tedious analyses conducted during the last 60 or 65 years, have been able actually to isolate and identify a large number of these hydrocarbons. The gasolines as manufactured from various crudes differ somewhat in chamical composition which in some cases is characteristic but for all practical purposes of the automobilist and for the internal combustion engine, all of these gasolines are equally satisfactory. Scientists have eliminated from the California petroleum products not found in Pennsylvania gasoline. Therefore, so far as any one knows, "gasoline" is a flexible term, being defined by physical tests rather than chemical analyses. That the practical efficiency of the gasoline has been maintained is fully shown by the recent and tenth semi-annual motor gasoline survey edited by N. F. Le Jeune, associate petroleum chemist and B. A. Landry, junior chemist United States Bureau of Mines. "On the whole," they say, "it seems that a better grade of gasoline is now being marketed than was marketed during the same season a year ago."

When it comes to any proposition for making synthetic gasoline by putting together its chemical components derived from other sources the chemist is entirely in the air. In the present stage

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of development of the industry even if this could be done it would be a victory of science without practical reward, because the component parts would be vastly more expensive than would be the gasoline produced under present methods. For these reasons the experiments of chemists of the Old World looking to the production of synthetic gasoline have no practical aspect for the American Petroleum technologists.

Flowers and Crude Used in Wyoming To Distill Perfume

CASPER, Wyo., Oct. 18.—A very interesting series of experiments with the higher naphthas of Wyoming petroleum is under way at Casper. The lighter constituents of crude oil are taken in the regular distillation and also the lighter cuts from the condensers of the compressor stations working on casinghead gas, to form a substance called isopropyl. This appears as a very light gasoline of a water white color in the bottle.

Flowers that possess an odor, such as the rose, the wild primrose that grows on the sage brush plains and others are then placed in a glass retort filled with this light gas called isopropyl and a distillation made at a low temperature by merely warming the retort slightly. The result is the extraction of the perfume of the flowers employed and the residue left in the retort is subjected to a process to remove the fiber and other detritus, leaving the perfume in a marketable state.

Classified Wants
Pages 96-97

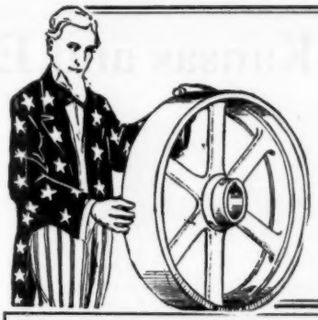
At present the experiments have progressed far enough to show conclusively that perfumes can be extracted successfully from flowers with the products of Wyoming petroleum, but the process is not yet placed on a commercial scale. Another line of the experimenters takes the flowers to be extracted and crushes the flowers in a warm oil of a heavy nature that comes from the crude in the lubricant distillation stage. This oil becomes almost a solid when cool but it has the power to absorb the perfume from the flowers as well as the lighter gasoline solvent and when treated with the lighter liquid, it gives off the perfume extracted. F.B.T.

"LATT-BENTYL" LATEST

A nw motor ful, callde "latt-bentyl," which costs less and is said to develop more power than gasoline, has been perfected in Sweden by Svensk Sprit, Ltd., according to the current issue of the "Swedish-American Trade Journal." The new motor fuel is a mixture of 20 to 25 per cent alcohol with 75 to 80 per cent gasoline. One of the technical problems in connection with the development of the new fuel has been the production of ethyl alcohol of virtually absolute purity, it is stated.

GRASSHOPPER LUB

From France comes the news of a discovery that oil made from the bodies of grasshoppers is peculiarly suited for airplanes because it remains liquid in high altitudes. Eighteen tons of the grasshoppers have already been exported from Africa to Europe for this purpose.



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LOOK FOR THIS TRADE MARK

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS PIPE LINE REPORT FOR AUGUST

Runs

	Month	Dy. Av.
*Prairie P. L. Co.	4,057,900	130,900
Gulf P. L. Co.	1,313,700	42,378
Texas P. L. Co.	365,910	11,803
Magnolia Pet. Co.	1,220,434	39,369
Empire P. L. Co.	855,506	27,597
Cosden P. L. Co.	879,320	28,365
*Sinclair P. L. Co.	1,347,043	43,453
*Other lines	8,742,000	282,000
Total	18,781,813	605,865
Total	17,394,174	561,103
Difference	1,387,639	44,762

Shipments

†Prairie P. L. Co.	3,363,251	108,169
Gulf P. L. Co.	1,101,896	35,545
Texas P. L. Co.	626,508	20,210
Magnolia Pet. Co.	726,892	23,448
Empire P. L. Co.	768,763	24,799
Cosden P. L. Co.	848,461	27,370
†Sinclair P. L. Co.	1,777,529	57,340
Other lines	8,370,000	270,000
Total	17,573,320	566,881
Total	17,101,885	551,674
Difference	471,435	15,207

Stocks

*Prairie Oil & Gas Co.	24,900,000
*Prairie Pipe Line Co.	2,000,000
Gulf Pipe Line Co. & Gypsy Oil Co.	9,686,289
The Texas Co.	6,896,397
Magnolia Pet. Co.	8,981,748
Empire Pipe Line Co.	3,429,360
Cosden Pipe Line Co.	3,012,521
*Sinclair Crude Oil Purchasing Co.	29,550,000
Carter Oil Co.	18,067,845
*Other lines	10,150,000
Total	116,674,160
Total	113,260,350
Difference	3,413,810

*Estimated. †Includes shipments of Texas crude.

Note: Stocks do not include approximately 8,800,000 bbls. of crude oil held in storage on priate tank farms and leases.

Runs from Wells

In the following table will be found the regular receipts from wells by arious pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for August and September.

	Aug., '24	Sept., '24
Nat. Trancit	181,414.09	152,088.41
S. W. Pa. P. L.	81,053.49	78,895.56
Eureka P. L.	345,884.02	351,485.53
Buckeye P. L. (Macksburg)	260,181.20	266,724.36
Buckeye P. L. (Cleveland)	13,813.10	14,345.30
Buckeye P. L. (Lima, etc.)	133,212.27	137,043.37
Indiana P. L.	12,415.93	13,098.14
Cumberland P. L.	333,217.34	343,759.39
N. Y. Transit	18,749.61	17,950.12
Tidewater P. L.	145,298.64	148,166.41
Pure Oil P. L.	186,362.59	189,939.55
Emery P. L.	37,151.95	39,983.11
Indian Ref.	60,022.97	58,273.83
Paragon Dev.	41,247.90	39,270.91
Pittsburgh P. L.	8,191.73	6,874.72
Total	1,858,216.83	1,887,898.71
Daily average	59,942.48	62,929.96

Note—Indian Refining Co. also reported other receipts of 325,551.33 bbls. Paragon Refining Co. had other receipts of 90,884.01 bbls. Paragon Deelopment Co. had other receipts of 4,615.28 bbls. Pittsburgh Pipe Line had other receipts of 2,763.37 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for August and September.

	Aug., '24	Sept., '24
Nat. Transit	271,259.10	326,398.90
S. W. Pa. P. L.	251,743.43	314,914.21
Eureka P. L.	213,589.82	164,748.30
Buckeye P. L. (Macksburg)	204,539.98	88,058.06
Buckeye P. L. (Cleveland)	975.11	1,214.51
Buckeye P. L. (Lima, etc.)	652,140.37	532,150.99
Indiana P. L.	775,599.54	750,599.95
Cumberland P. L.	178,694.99	132,518.69
Southern P. L.	.....	.....
Crescent P. L.	5,925.24	.....
N. Y. Transit	354,470.00	437,758.87
Northern P. L.	102,861.64	125,166.94
Tidewater P. L.	83,514.81	125,057.78
Pure Oil P. L.	189,288.20	229,439.68
Emery P. L.	44,128.24	41,884.28
Paragon Ref.	96,765.40	68,348.08
Indian Ref.	356,300.95	433,576.20
Paragon Dev.	23,117.96	36,936.44
Pittsburgh P. L.	11,702.21	10,978.98
Total	3,816,717.09	3,819,750.86
Daily average	123,119.90	127,325.03

Gross Stocks

The gross stocks held by various pipe lines in the oil producing section of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of August and September were as follows:

	Aug., '24	Sept., '24
Nat. Transit	868,774.55	961,508.69
S. W. Pa. P. L.	704,080.51	724,341.53
Eureka P. L.	1,724,768.60	1,697,079.59
Buckeye P. L. (Macksburg)	307,678.96	352,911.42
Buckeye P. L. (Cleveland)	41,396.68	46,294.53
Buckeye P. L. (Lima, etc.)	4,247,229.25	4,175,978.70
Indiana P. L.	639,240.14	679,016.62
Cumberland P. L.	609,383.44	605,423.66
Southern P. L.	606,326.30	630,608.67
Crescent P. L.	58,570.05	58,433.71
N. Y. Transit	934,491.17	763,797.71
Northern P. L.	731,182.89	914,613.78
Tidewater P. L.	.....	.....
Pure Oil P. L.	372,139.83	328,576.77
Emery P. L.	6,883.96	6,003.80
Paragon Ref.	163,900.12	79,035.93
Indiana Ref.	188,296.83	168,875.27
Paragon Dev.	12,195.03	10,287.89
Pittsburgh P. L.	5,137.24	4,047.30
Total	12,221,675.55	12,206,835.87
Increase	159,314.23	.....
Decrease	.....	14,839.68

Grades of Oil

The following table shows the amount of the different grades of oil held by the Eastern pipe lines at the close of August and September, showing the gross stocks of the above fields:

	Aug., '24	Sept., '24
Pennsylvania	3,501,370.36	3,707,179.82
Lima	1,255,030.74	1,317,819.86
Kentucky	1,471,375.42	1,522,433.32
Mid-Continent	5,866,147.67	5,592,472.05
Illinois	127,757.36	66,730.82
Total	12,221,675.55	12,206,835.87

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1921	1922	1923	1924
January	64,460	67,702	75,790	62,633
February	76,054	75,096	72,093	68,023
March	68,555	78,531	76,592	68,721
April	65,036	75,462	75,614	71,058
May	65,466	77,592	77,365	63,942
June	62,438	76,103	77,593	68,230
July	59,486	76,435	71,879	64,208
August	64,888	79,387	76,910	59,942
September	69,110	78,512	72,358	62,930
October	57,688	77,209	76,256	.....
November	58,470	75,273	70,762	.....
December	61,000	73,351	60,271	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for past four years:

	1921	1922	1923	1924
January	115,550	119,792	171,067	145,512
February	96,736	111,362	164,279	148,732
March	84,168	127,753	185,487	147,093
April	101,015	127,068	170,751	147,611
May	100,253	127,840	177,102	134,997
June	105,037	137,638	173,598	143,010
July	97,096	137,872	168,330	124,187
August	101,652	153,275	142,766	123,120
September	117,440	158,761	127,266	127,325
October	105,728	166,345	134,597	.....
November	121,803	165,677	131,426	.....
December	104,023	172,861	129,909	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines, at the close of each month for the past three years:

	1923	1923	1924
January	16,297,858	14,040,567	12,907,201
February	17,009,203	14,028,437	11,944,940
March	16,877,937	13,873,146	10,986,752
April	16,777,842	13,731,576	10,932,740
May	16,948,962	13,815,622	11,385,380
June	16,810,169	14,641,253	11,544,596
July	16,660,286	14,643,584	12,063,361
August	16,235,229	14,779,539	12,221,676
September	16,228,545	14,803,444	12,206,836
October	15,757,746	14,504,111	.....
November	15,171,972	14,157,726	.....
December	14,323,765	13,444,361	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and as counted in the stocks and averages reported above:

	Receipts	Shipments	Stocks
1923—			
August	3,119.07	3,769.34	32,874.98
September	2,829.79	5,832.38	19,842.27
October	2,694.23	5,251.81	17,284.79
November	2,980.66	4,150.98	16,114.47
December	2,893.07	3,499.27	15,648.27
1924—			
January	2,942.19	3,641.71	7,348.75
February	2,151.78	1,926.55	10,673.98
March	3,398.78	1,716.28	11,756.43
April	3,311.84	2,066.78	13,001.54
May	3,036.50	5,338.21	10,699.83
June	3,188.31	407.01	12,481.13
July	3,067.74	3,334.29	12,214.59
August	2,901.36	6.21	15,109.73

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, Oct. 1	2,231,284.72
Runs from wells	685,912.17
Other receipts	150,271.3
Regular deliveries	501,422.16
Other deliveries	353,638.21

The amount of Illinois oil run by the Tidewater Pipe Line Co. in September was 24,902.64 bbls., and deliveries were 24,523.76 bbls. Adding these figures to those of the Illinois Pipe Line Co., makes the runs and deliveries from the Illinois Field as follows:

	Runs	Deliveries
1923—		
September	542,561.59	305,925.0
October	576,867.09	347,812.22
November	546,859.43	285,632.09
December	534,185.04	282,542.41
1924—		
January	493,337.25	286,793.81
February	555,490.70	353,613.14
March	611,289.36	369,543.31
April	514,356.43	339,546.10
May	751,080.44	510,414.42
June	725,060.87	528,461.28
July	759,646.84	552,286.50
August	720,457.72	519,135.75
September	714,875.36	535,762.60

The Tidewater Pipe Co., Ltd., also delivered in September 115,940.60 bbls. of Oklahoma oil. The total deliveries of all grades by the Tidewater were 278,338.14 bbls.

AVERAGE WEEKLY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

Av. bbls. per wk.—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: Galveston	New Orleans Baton Rouge	Pt. Arthur Sabine Pass	Tampa	Total	Total All Ports
May	42,903	32,194	615,709	92,706	61,642	846,154	.....	70,127	.....	.....	70,127	916,281
June	121,800	34,300	581,000	103,369	51,331	891,800	.....	.....	.....	.....	.....	891,800
July	37,710	16,129	473,516	84,452	42,452	654,249	.....	16,936	.....	.....	.....	671,185
August	114,032	33,419	654,387	71,806	33,871	907,515	907,515	.....	6,774	.....	.....	914,289

AVERAGE WEEKLY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Av. bbls. per wk.—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: Galveston	New Orleans Baton Rouge	Pt. Arthur Sabine Pass	Tampa	Total	Total All Ports
March	148,258	141,806	283,458	124,642	292,642	990,906	463,806	365,358	223,552	55,545	1,108,261	2,099,167
April	152,269	154,931	313,900	94,962	243,969	971,131	382,900	348,131	119,000	15,869	865,900	1,837,031
May	156,485	134,602	288,903	59,612	300,097	939,699	315,679	295,358	199,591	38,164	848,792	1,788,491
June	128,169	108,731	434,931	68,131	239,400	971,362	412,741	251,762	159,831	33,831	858,165	1,829,527
July	62,097	81,291	445,067	38,418	277,970	904,843	320,194	273,455	130,739	34,973	759,361	1,664,204
August	80,839	57,355	247,710	98,903	207,065	691,872	370,549	238,677	115,839	14,677	739,742	1,431,614

GROSS PRODUCTION AND DAILY AVERAGE IN THE UNITED STATES FOR 12 MONTHS

		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Wyoming-Montana	Other Fields	Total
1923—										
September:	Month	25,762,487	12,812,220	12,879,682	2,234,730	2,164,900	1,787,430	4,661,550	3,269,551	66,472,550
	Daily average	858,750	427,074	429,323	74,491	105,497	59,581	152,052	105,465	2,216,753
October:	Month	24,576,400	12,961,782	15 933,383	2,336,346	3,120,274	1,837,990	3,540,880	3,475,913	67,782,968
	Daily average	792,787	418,122	513,980	75,366	100,654	59,290	114,222	112,126	2,186,547
November:	Month	22,397,848	12,334,629	15,556,507	2,268,840	2,973,000	1,816,860	4,792,466	3,138,464	65,278,614
	Daily average	746,595	411,154	518,560	75,628	99,100	60,562	159,782	104,615	2,175,393
December:	Month	21,899,247	12,232,259	10,065,556	2,345,150	4,017,850	1,919,574	3,304,326	3,147,812	58,922,974
	Daily average	706,427	394,589	324,705	75,650	129,608	61,922	106,591	101,542	1,901,386
1924—										
January:	Month	20,912,500	12,292,833	10,326,643	2,233,878	3,686,680	1,601,175	4,636,230	2,950,500	58,640,439
	Daily average	674,597	396,543	333,449	71,738	118,925	51,651	145,556	95,177	1,891,637
February:	Month	19,341,226	12,236,637	10,495,486	2,112,853	3,302,750	1,497,450	4,168,450	2,997,700	56,152,552
	Daily average	666,939	421,953	361,913	72,857	113,888	51,629	143,740	103,369	1,936,295
March:	Month	19,913,262	13,336,851	12,077,617	2,296,425	3,882,695	1,701,593	4,993,890	3,258,000	60,370,233
	Daily average	642,363	430,221	389,601	71,175	125,248	54,890	128,835	105,097	1,947,430
April:	Month	19,299,849	13,452,240	11,725,830	2,265,090	4,068,225	1,495,582	3,901,755	3,231,000	59,423,571
	Daily average	643,328	448,408	390,861	75,503	135,608	49,853	130,058	107,700	1,981,333
May:	Month	19,833,576	14,248,057	11,923,216	2,486,696	4,659,117	1,596,701	4,033,564	3,355,000	62,136,027
	Daily average	639,793	459,615	384,623	80,216	150,291	51,507	130,109	108,226	2,004,388
June:	Month	18,807,999	14,457,390	11,515,020	2,473,320	4,756,443	1,811,880	3,798,634	3,211,500	60,832,186
	Daily average	626,933	481,913	383,834	82,444	158,548	60,419	126,621	107,050	2,027,739
July:	Month	19,274,755	15,191,860	11,820,389	2,678,824	4,598,160	1,931,641	3,728,525	3,287,990	63,512,164
	Daily average	621,766	490,059	381,319	86,414	148,321	62,311	120,275	109,290	2,049,750
August:	Month	19,112,998	16,572,104	11,805,753	2,717,398	4,400,116	1,898,246	3,816,627	3,280,017	63,603,259
	Daily average	616,548	534,584	380,831	87,658	141,810	61,234	123,117	105,807	2,051,730
Total 12 months		251,133,147	162,128,853	146,136,982	28,349,552	46,630,210	20,896,122	48,276,897	38,703,447	742,253,210
Daily average		686,153	442,975	399,279	77,458	127,405	57,093	131,904	105,747	2,028,014

In this kind of a "union" there is never a chance for trouble to occur—when Axelson Pumps and Sucker Rods are the main stays of the event. -:- -:- -:-

Axelson Machine Co.

P. O. Box 316 Los Angeles, Cal.

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The Oil and Gas Journal, issued weekly by The Petroleum Publishing Company, 114-116 West Second Street, Tulsa, Oklahoma. Subscription price $6.00 a year; 15 cents a copy.

The WIRTH Drilling Outfit Introduced in This Country

The "Wirth" Waterflush Combination Rig

The "Wirth" waterflush combination rig consists of a fully equipped rapid percussion waterflush drilling plant furnished with a rotary table. The plant is entirely constructed of iron and steel. It may be used for depths up to 4,000 feet. The special pumps and accessories for feeding the mud flush of the tools and the hoisting device are of such a high quality that they will perform their duty easily and economically as well for the waterflush percussion as for the rotary.

The rapid percussion is brought about by means of the usual rods and percussion tools. The rods are connected with the walkingbeam of the rig by a steel rope. The stroke of the walking-beam is adjustable, the working weight of the rods is balanced by the piston of a special compression air cylinder.

The rotary drilling is done by the usual rotary table. The construction of this table is of the most modern type, with arrangements for retaining and screwing off. The sprocket on the pinion shaft of the rotary table is connected by a chain with a sprocketwheel on the mainshaft of the percussion rig. Therefore the usual draw works of the rotary system are not needed.

The "Wirth" waterflush combination is the only combination giving all the advantages of waterflush and rotary drilling. In America the rotary system is thought superior to all others, in Europe the waterflush has beaten every competing system. Therefore the "Wirth" waterflush is the best combination rig up to date.

The "Wirth-Fauck" Universal Rapid Percussion Rig

The walking-beam saddle is so disposed that the point of balance is in the same height as the axle of the top pulley which reduces the deviation in the swing of the rods in the vertical plain to a minimum. The top pulley cramped into hinged bearings is of such dimensions as to permit placing of casings of 29.5 inches when rolled back. The eccentric shaft driven by means of a hemp rope has eccentric bushing (differential eccenter) by means of which tool strokes from 2.75 to 7.87 inches may be obtained. For dry or cable drilling tool strokes from 25.2 to 39.37 inches are obtained by changing to the crankshaft.

The crankshaft is driven from the eccentric shaft. Through the crankshaft the walking-beam is driven by means of a connecting rod (pitman.) With the "WIRTH-FAUCK" Rig up to 150 strokes a minute have been attained.

In the construction of the "WIRTH-FAUCK" Universal Rapid Percussion Rig the greatest care has been taken to make drilling an easy work. By special arrangement it is possible to apply the following different methods:

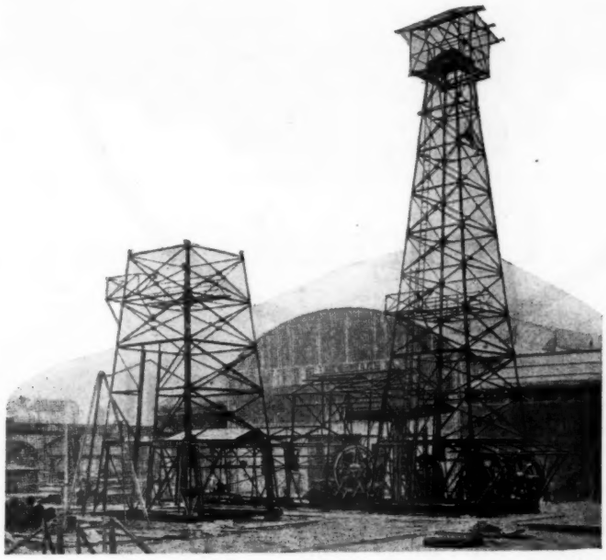
1. RAPID PERCUSSION DRILLING. Tool stroke 2.75 to 7.87 inches for direct or reversed flush. The possibility of drilling the full length of the normal rods has been provided for.

2. CANADIAN DRILLING. Tool stroke up to 25.2 inches.

3. CABLE TOOL DRILLING. Tool stroke up to 39.37 inches.

4. CORE DRILLING.

Outfits Are Now Being Tried for the First Time



"Wirth" California Type Combination Rig

Cable tools or rotary may be used in the "Wirth" California Type Combination Rig. This drilling outfit is similar to the combination rigs at work in many of the fields of the United States. Several refinements are noted in the Wirth outfit, however, which have not made their appearance in the American rigs. The walking beam used in cable tool work is a strong iron box-girder. The bearing of the pitman rests on a spring cushion on the rear end of the walking beam. This cushion takes up the blows in drilling and gives greater elasticity to the drilling parts. An oiling device gives positive lubrication between pitman and crank pin.

A sprocket wheel and chain drives the calf wheel from the band wheel and a rope pulley drives the bull wheel. An idler wheel serves to tighten the connection between band wheel and bull wheel. Claw clutches are provided for sprocket wheel and rope pulley. The sand reel operates by friction from the band wheel. Brake bands are lined with copper or fibre plates. The derrick, crown block, calf and bull wheels, sand reel and other principal features are constructed of steel or iron.

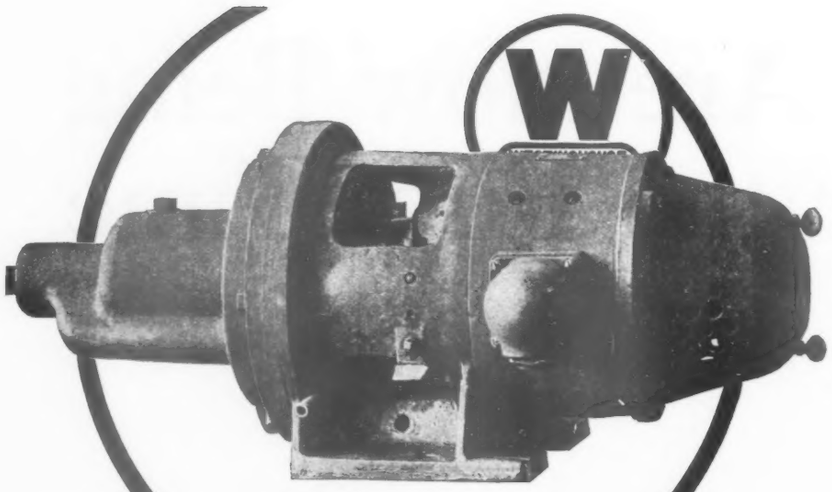
If change from cable to rotary drilling is desired, the rotary engine is backed up to the edge of the derrick and the draw works is swung into place at the left of the bull wheel, getting away from the cable tool equipment which is not disturbed. Rotary table and drive chain may be installed easily. A separate engine house is required for the rotary equipment. The entire combination outfit is well designed and constructed and is capable of drilling deep holes comparable to the new levels attained in the United States.

ALFRED WIRTH AND CO., K-G

Erkelenz, Germany

Telegram and Cable Address
Bohrgerete ERKELENZ

Codes ABC 5th Edition
Bentley's Complete Phrase Code
Bentley's Oil Edition



Designed
for
Oil and Gas Wells

THE Westinghouse Rig Lighter, designed especially for oil and gas wells, is the result of years of experience in the development and manufacture of turbines and generators. This rig lighter, developing 1500 watts at 115 volts, solves the problem of safe and efficient lighting of oil rigs.

The superiority of this rig lighter is based on the following factors:

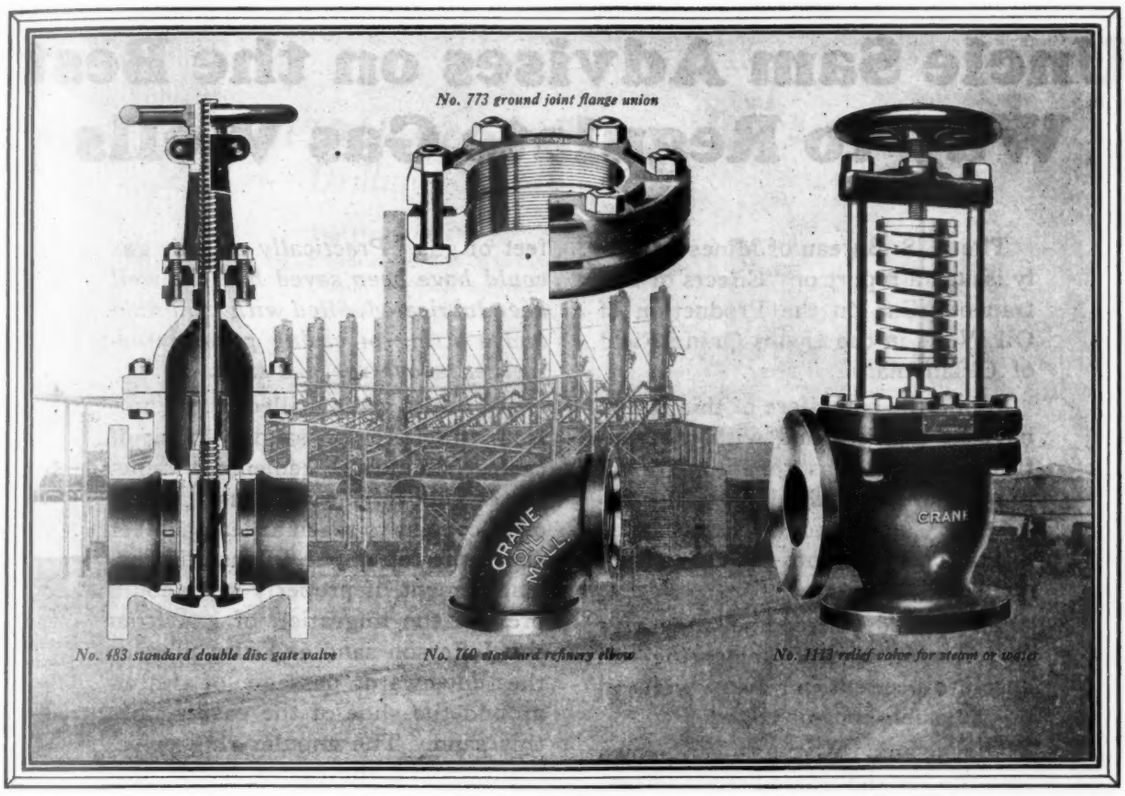
Simplicity	*Substantial Construction*
Durability	*Reliability*
Compactness	*Portability*
Ease of Installation	*Safety*

All of these important requisites are possessed in an extraordinary degree by Westinghouse 1½ kw. Turbine Generator Unit.

Our nearest district office will be glad to give you complete details.

Westinghouse Electric & Manufacturing Company
East Pittsburgh Pennsylvania
Sales Offices in All Principal Cities of
the United States and Foreign Countries

Westinghouse


No. 773 ground joint flange union
CRANE
No. 483 standard double disc gate valve
No. 760 standard refinery elbow
No. 1113 relief valve for steam or water

SHOWING THE WAY FROM WELL TO TANK CAR

Where crude oil is released from its deep prison, it meets at once the guide that is to conduct it away from the field, and through all of its stages of refinement.

Its first directions are taken from the drilling-through valve on top of the well. It then follows the course indicated by the piping and valves of the gathering lines. In the refinery it responds to the commands of many different types of valves. Never once does it come out from under the control of a pipe-line, until it is ready for the consumer.

Nowhere in its course can it be entrusted with safety and economy to piping of doubtful quality. The fire hazard is too great. It is almost as important, therefore, to use Crane dependable piping materials in field and loading racks as in the hot lines of the refinery.

CRANE

GENERAL OFFICES: CRANE BUILDING, 836 S. MICHIGAN AVENUE, CHICAGO
CRANE LIMITED: CRANE BUILDING, 386 BEAVER HALL SQUARE, MONTREAL

Branches and Sales Offices in One Hundred and Forty-eight Cities
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CRANE EXPORT CORPORATION: NEW YORK, SAN FRANCISCO, SHANGHAI, CHINA
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Uncle Sam Advises on the Best Way to Regulate Gas Wells

The U. S. Bureau of Mines recently issued a report on "Effects of Extraneous Gas on the Production of Oil Wells in the Lyons-Quinn Field of Oklahoma."

While the compilers of this report have no fault to find with the controlled use of gas to stimulate oil production, they do deplore the *unnecessary, uncontrolled* and *wasteful* migration of gas into the air or from one sand to others.

The remedy, of course, they give as *scientific oil well cementing*—an absolute necessity in every well, oil or gas, cable-tool or rotary.

"Large amounts of gas were blown into the air and wasted while efforts were being made at several wells to secure effective formation shut offs," says the report. One large gas well blew wide open for several weeks and wasted nearly one billion cubic feet of gas. *Practically all this gas could have been saved had the well been lubricated, filled with mud fluid and a string of casing properly cemented above the gas sand.*

"In future wells drilled to produce from the Jefferson sand a string of casing should be cemented immediately above this sand using sufficient cement to reach at least 50 feet above the top of the Lyons oil sand. The cement, if properly set, should prevent the migration of gas from the Jefferson sand and also prevent the downward passage of water, around the shoe of the casing, into this sand. The annular ring of cement around the casing would also probably prevent any water found in the base of the Lyons oil sand from rising along the outside of the casing and entering the oil bearing part of this sand, as well as preventing the downward passage of water into it."

Let Us Repeat

No well, cable-tool or rotary, is properly completed that is not properly cemented. Casing collapse, water troubles, shifting formations, migration of fluids to different sands are just a few of the serious hazards it guards against. We are undisputed leaders in this field. Ask us for details.

HALLIBURTON OIL WELL CEMENTING CO., DUNCAN, OKLA.

Equipment Available for All Fields

HALLIBURTON

Scientific Oil Well Cementing

It Holds the World's Drilling Record

The Union Oil Company's Hellman No. 2 Well in the Dominquez Field on which the world's speed record for drilling was made. The crew sank this 3520-foot hole and set the casing in fifteen days for a world's record. It is a most remarkable accomplishment and it will be a long time before this record is broken.

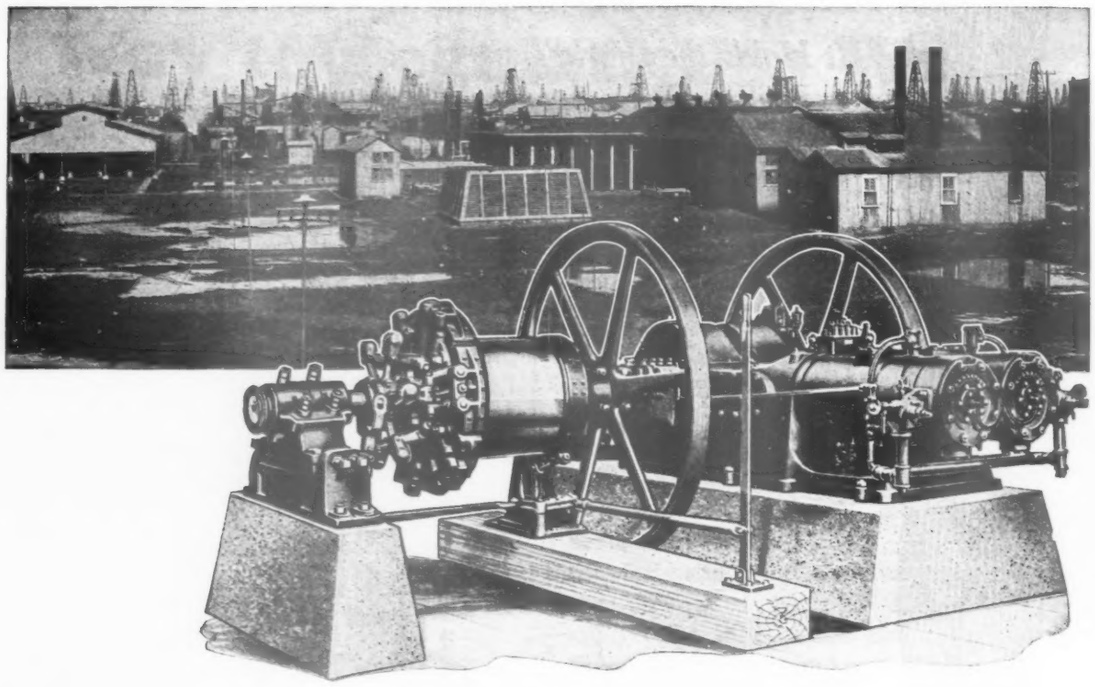
CRESCENT WIRE ROPE
100% UNIFORM

Harness your drilling tools to a thoroughbred wire rope. Be sure you know its pedigree—know the stock from which it came and what it is capable of doing...Thousands of drillers are willing to bet on "Crescent" every time. They have confidence in its strength and stamina, its unflinching and unfaltering service, its unbounded capacity to face the toughest ordeal and finish with honors...You hold the reins to a profitable drilling job—profitable only if it operates without interruption. Insure against interruption. Order "Crescent"—the utmost in wire rope.

Sold at all Jarecki Manufacturing Company Stores

AMERICAN CABLE COMPANY
INCORPORATED
NEW YORK, N. Y.

Stocked and Sold by Leading Supply Houses Everywhere



"It doesn't owe me a cent!"

That's what one operator said about his Bessemer after he had used it only long enough to drill five wells. Such statements from Bessemer owners are far from unusual; in fact the service rendered by Bessemer engines invariably calls forth enthusiastic praise.

In *all* oil fields, where Bessemers meet *all* operating conditions, their 99%+ running averages and their long, uninterrupted service have made Bessemers the favorites of both owners and operators.

THE BESSEMER GAS ENGINE COMPANY
52 York Street ∴ ∴ Grove City, Pa.

BESSEMER

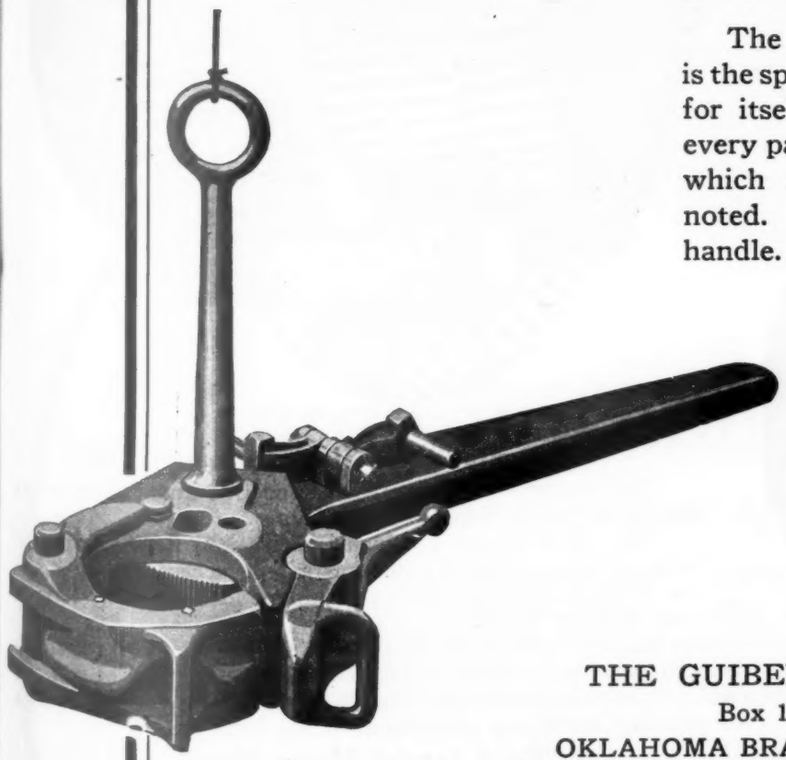
BESSEMER OIL FIELD ENGINES – COMPRESSORS VACUUM PUMPS – ROLLER PUMPING POWERS

One Stab Takes Hold A Pressure Lets Go

The Speediest Tool Joint Tong

Seconds saved in handling each tool joint, mean hours saved, in the long run.

The GUIBERSON Tool Joint Tong is the speediest ever produced. It will pay for itself in speed alone—yet it has in every particular the exceptional merit for which all GUIBERSON products are noted. It's sturdy, too, and extra-safe to handle.



"Better Be Safe Than Sorry"

THE GUIBERSON CORPORATION
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CALIFORNIA BRANCH: 1737 E. 7th St., Los Angeles

318 First Nat'l Bank Bldg., HOUSTON

506 Trust Bldg., NEWARK, O.

245

GUIBERSON

BETTER BE SAFE THAN SORRY

REED ROLLER BIT COMPANY "The Bit with the Bite"

Leaves no junk in the hole

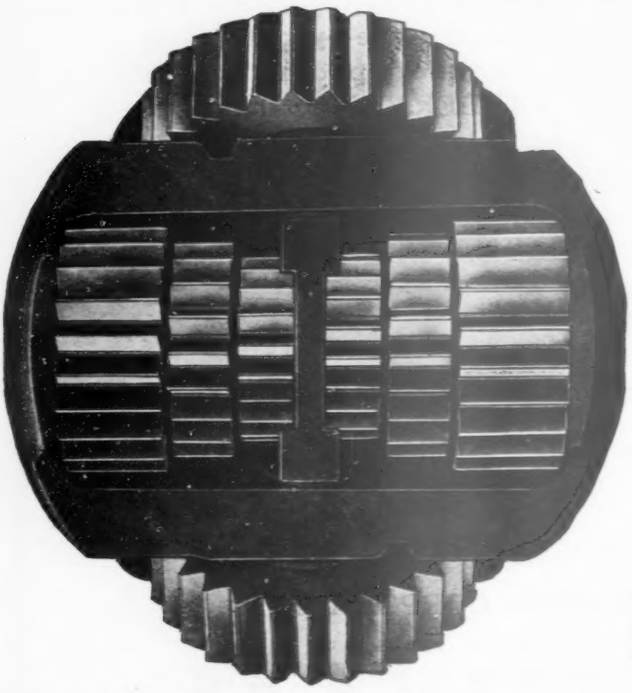
Get

SPEED

With the Reed

Speed is highly desirable and incidentally profitable in operation—IF speed can be obtained with safety. The Reed Roller Bit affords absolute safety with speed.

Notice the mechanical build of a Reed bit which gives all the strength of a forge hammer. Wide cutting surface of bithead is one secret of fast cutting while the reamer gives you full gauged, smooth-walled holes STRAIGHT DOWN, so that casing can be set easily and without obstructions. When a hole is made with a Reed Bit and Reamer it is a finished hole—all at one drilling.



CUTTING SURFACE OF THE BITHEAD

Above is shown view of large bithead with six cross rollers. Smaller sizes have four cross rollers. Arrangement of cutters revolve on different centers and attack rock at different angles—a distinct cutting action that makes the Reed Bit speediest of all rock tools.

It is possible to excel speed records with Reed Roller Bits and yet enjoy the maximum of safety.

Lubricated With Slush Instead of Oil

This feature—exclusive with Reed Bits and Reamers—has practically revolutionized rock drilling.

Two whole years of "Slush Lubrication" in the leading oil fields of the world, is a demonstrated success and Reed bits and reamers have attained a dominant lead over any form of rock drilling known.

The idea is a very simple one; slush is pumped (with full force) through bearings instead of oil, thus clears bearings of grit and sand, preventing friction and eliminating useless up and down trips for refilling lubricator chambers.

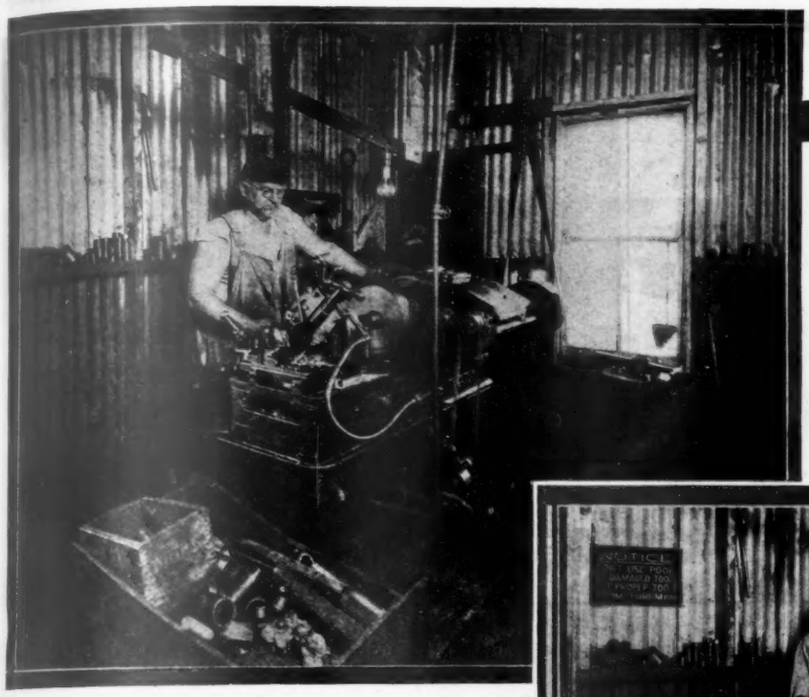
"Reed Service Means Now"

We just recently filled a $40,000 order without delay. Plant running 24 hours daily to maintain huge reserve supply in order that shipments can be made promptly.

Reed Roller Bit Co.

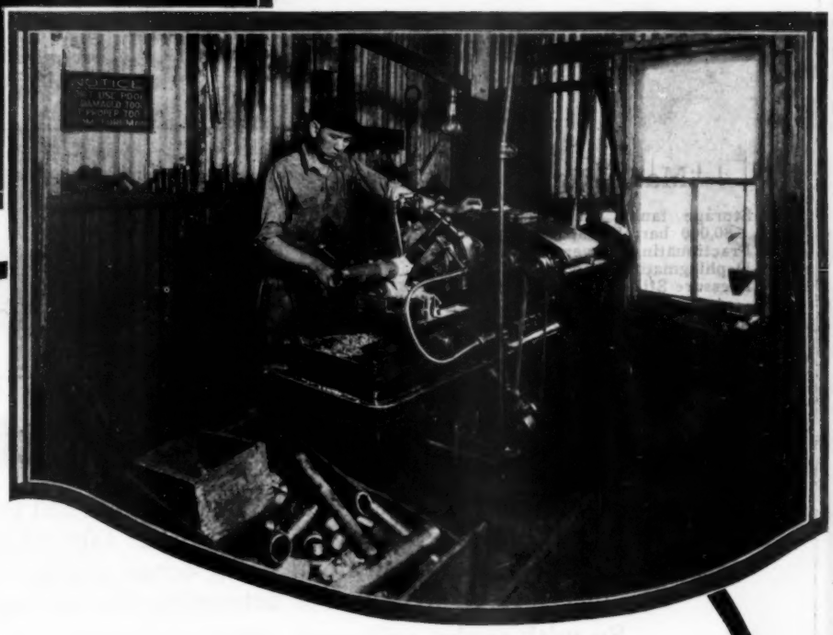
HOUSTON, TEXAS, U. S. A.

CALIFORNIA OFFICE: 1341 Santa Fe Avenue, Los Angeles. Phone Tucker 2785. Ask for Mr. E. B. Wiggins.



26 Years

of accumulated experience and constant advancement in serving the oil industry are back of Williams' service in meeting your present-day needs.



Sturdy, unfailing stamina—

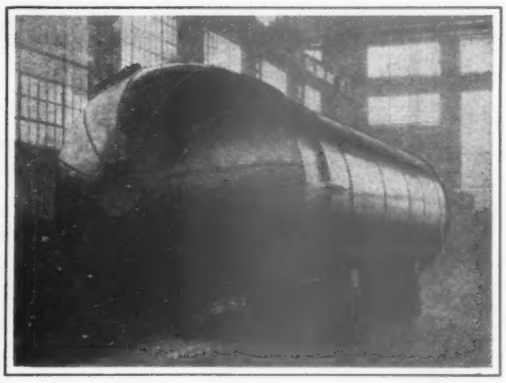
to endure the rigors of severe strains

It takes a machine of more than kid-glove ability to do the tough, strenuous work of cutting and re-threading rust-encrusted pipe that has been on active service under the ground for a stretch of time.

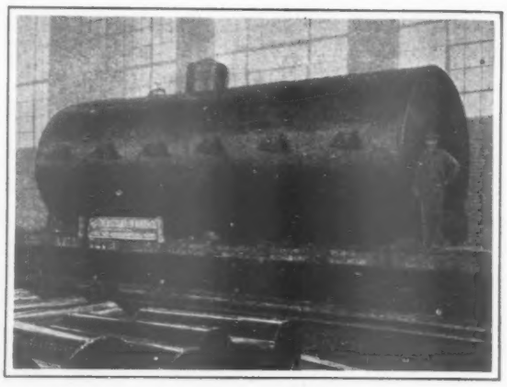
The demands of this man-sized job call for honestly built threading equipment. Equipment built with enduring and serviceable materials. Staunch, sturdy equipment—that keeps on giving day-in and day-out service in cutting and threading new pipe and rallies to the job when the stubborn demands of re-threading old and rusted pipe challenge the delivery of reserve power.

Proof positive and conclusive of Williams' Pipe Threaders to survive the acid test of service is found in those shops where Williams' Machines have been keeping production up and threading costs down in some cases for as long as 26 years.

WILLIAMS TOOL CORPORATION ERIE PA., CANADIAN PLANT BRANTFORD ONTARIO



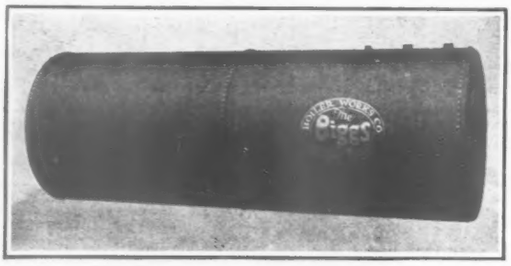
Agitator on test block. In the severe test which is given here, long and satisfactory service to the buyer of Biggs equipment is assured.



Biggs Oil Still on flat car ready for shipment. The exceptional quality of our riveting methods are an important factor in this class of work.

"Made Right—

Storage tanks, all kinds up to 80,000 barrels capacity
Fractionating Towers or Columns
Dephlegmating Towers
Pressure Stills for Cracking Process
Steam Stills, Heat Exchangers



Always Tight"

Crude Stills, Condenser Boxes
Agitators, Run Down Tanks
Crude Storage Blending Tanks
High Pressure and Accumulator Tanks
Direct Heat Driers

What's Under the Hood?

In appraising a motor car you have learned to judge not so much by external appearance as by those other factors popularly characterized as "What's under the hood." In other words, the inbuilt quality of the chassis itself, which will determine the performance and life of the car.

So with tanks, stills and other steel plate equipment. Are you just buying so much steel, of a certain size and shape, or are you looking "under the hood," to determine whether the equipment is a real investment?

Whether you require tanks for filling stations, bulk storage, or complete refinery equipment, including 55's and 80's, Biggs is one source of supply that you can't afford to overlook.

We would like to have you look "under the hood" in the Biggs shops, and see why we can claim so much for Biggs equipment. On price and delivery, too, our splendid facilities are a decided asset to our customers. We carry standard sized tanks in stock for immediate shipment.

THE BIGGS BOILER WORKS COMPANY

Akron, 35, Ohio

Specialists in Riveted Steel Plate Equipment

BIGGS TANKS

Field Storage and Refinery Equipment

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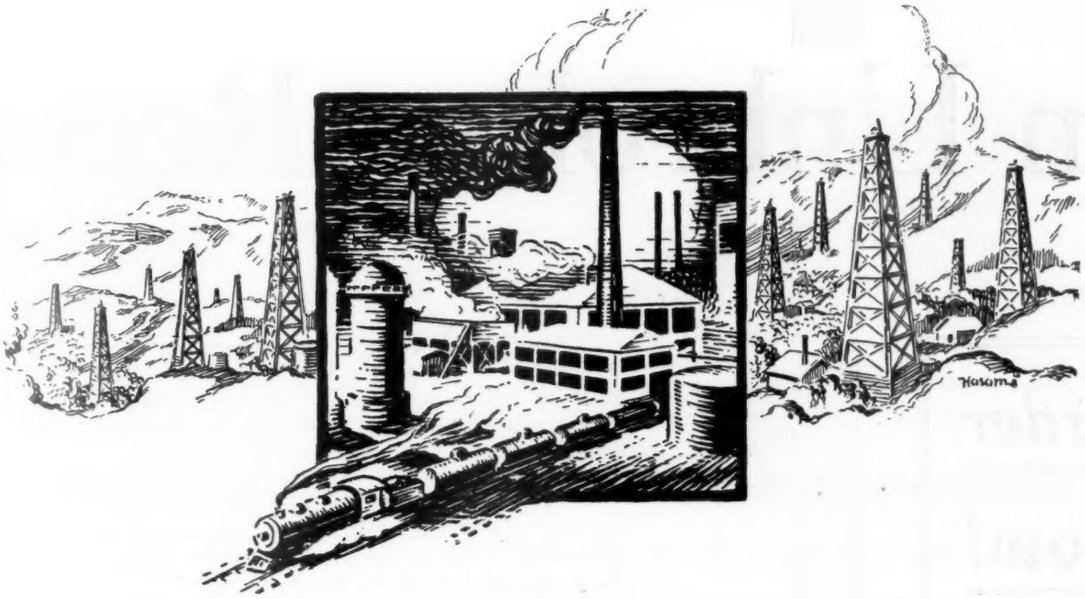

Minus Delays!

A plus service combining speed and quality that increases profits

THIS offers you quality that is bound to please your customers—with speed that increases the business you can handle. For here is a producing, refining and selling organization that blankets the country. It is service minus delays—minus disappointments. You get the products, the specifications you want—and you get them when you want them! Write, wire or phone.

GASOLINE—all grades
LUBRICATING OILS—all grades
Tank cars, carloads in barrels
CYLINDER STOCKS—600, 650
Steam refined and filtered
FUEL and GAS OIL—all grades
WATER WHITE KEROSENE
Gravities 40 to 47
MINERAL SEAL or 300 OIL
—and all other Petroleum Products

Note the list and locations of our 9 refineries and 9 branches! All linked by private wires. That's why we can handle your business with telegraphic speed.

THE PURE OIL COMPANY

General Offices: COLUMBUS, OHIO

Independent—and successful, through unvarying high quality in all products

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Philadelphia
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An Unbroken Record

Order Now!

It Will Help You!

Among the subscription renewals received today was one in a Registered Letter. The writer said he had just noticed that his subscription expired with the current issue and he wished to make sure he would not miss a copy.

"The chief value of The Oil and Gas Journal to me," he writes, "is in the permanent record it presents of the developments in the industry. For that reason I wish to keep my file intact and ask you to see that my subscription is entered promptly so there may be no break in my numbers."

It is a common experience that the missing number of any file is sure to be the one most urgently needed. It is like the collar button that always rolls farthest under the bed. The one way to assure that your file of The Oil and Gas Journal will not be broken is by placing your name on the subscription list. Then you can feel certain that each week's issue will reach you. Depending on buying copies at a news stand may be upset by your being called away, by preoccupation with an engagement or a hundred similar interruptions of your regular life.

Best way is to let Uncle Sam do it. Fill in the coupon and the mail carrier will see that you have your Oil and Gas Journal on time every week.

And, speaking of renewals, look at the address label for the date of expiration so you may have ample time to notify the office that you want your subscription continued without danger of missing an issue.

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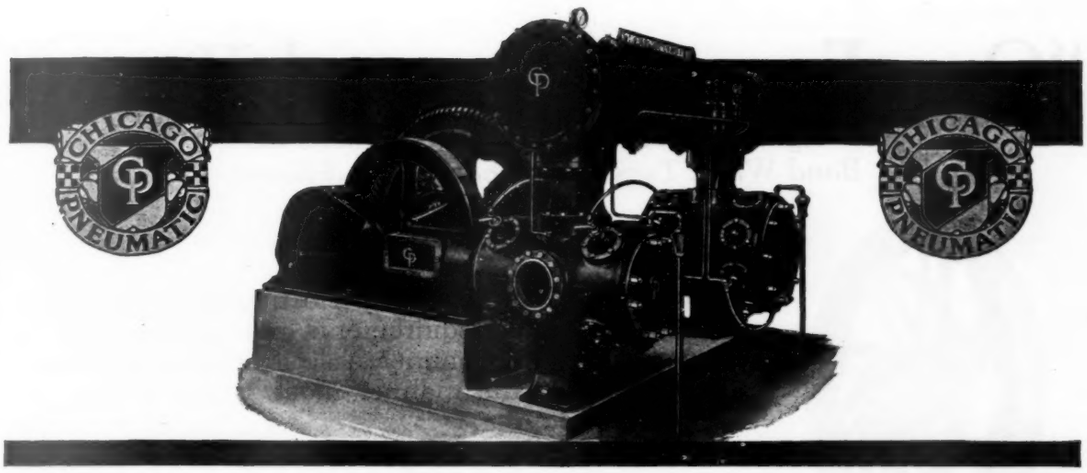
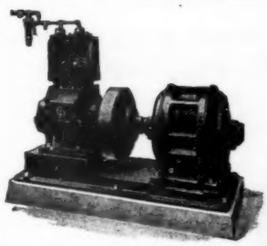


CP Power Driven Air Compressors

THE Compressor with the SIMPLATE VALVES is made in belted and direct connected types, single and two-stage, and in capacities from 17 to 4,420 cu. ft. of free air per minute. You will find in CP Compressors all modern improvements such as enclosed frame providing flood lubrication, liberal bearing surfaces, three-step control, in fact everything that promotes efficiency, reliability and long serviceability.

Precedents are important guide posts when the reasonings are fundamentally sound. The General Manager of a large Mining Company has the following to say about their Chicago Pneumatic Air Compressors:

"Replying to your letter dated on the 5th inst., asking our experience with the SIMPLATE VALVES on the air compressors we purchased from your company: I wish to say these valves have given us unusually satisfactory service. Our records show that in 1913 we purchased from your company, a two-stage sychronous motor driven air compressor of about 1,600 cu. ft. capacity, with Simplate Valves. This compressor has been in continuous service since that time, covering a period of ten years and four months and working sixteen hours per day. In 1915 we purchased from you a similar air compressor with Simplate Valves. This compressor has been in continuous operation for eight years and three months working sixteen hours per day. In 1920 we purchased another air compressor from you similar to the above. This compressor has been in continuous service three years working sixteen hours per day. The total service of these compressors is equivalent to twenty-one years nine months. The cost of repairs for these three compressors covering this period has been $416.13."



Chicago Pneumatic Air Compressor, Type P2-DE. Made in capacities of 128, 160 and 210 cu. ft. per minute.

Photostat copy will be furnished on request.

Ask for bulletins and let us duplicate this service for you.

Chicago Pneumatic Tool Company

6 East 44th Street, NEW YORK, N. Y.

*Sales and *Service Branches all over the World*

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*Cleveland												*Winnipeg

Canadian Pneumatic Tool Company, Ltd., Montreal, manufacturers of Chicago Pneumatic products in Canada
Consolidated Pneumatic Tool Company, Ltd., London, manufacturers of Chicago Pneumatic products in England

C-134

BOYER PNEUMATIC HAMMERS · · LITTLE GIANT PNEUMATIC AND ELECTRIC TOOLS
CHICAGO PNEUMATIC AIR COMPRESSORS · · VACUUM PUMPS · · PNEUMATIC HOISTS,
GIANT OIL AND GAS ENGINES — ROCK DRILLS · · COAL DRILLS

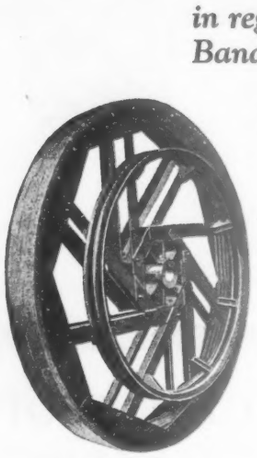
CHICAGO PNEUMATIC

The Compressor with the Simplate Valve

"Our Experience—*and* Yours"

in regard to Steel Band and Calf Wheels and Band Wheel Tugs has probably been different

But ours should help yours



Steel Band Wheel

Made in standard diameters, faced for standard width belting. Steel Angle Arms, securely riveted to circles of Steel Cants and bolted to a Shaft Hub, eliminates the need of band wheel flanges. Furnished with metal Tug Pulley when desired.

WE WERE three years perfecting the items listed. We studied requirements and undertook to fill them, not in the manner easiest or least expensive for us, but in the manner most satisfactory to the consumer.

Therefore, if your experience has not been satisfactory—try the results of ours. We have paid the bill and offer to share the benefit with you. Try us.

The Parkersburg reputation is behind these Wheels, reputation for the best—in design, construction, delivery, freedom from experiment and desire to sell Quality and Service only.

This reputation has made Parkersburg Products outstanding over a period of 27 years.

The Steel Wheels are no exception.

They stand out in a class by themselves.

See them in the fields—try them on your rigs.

Ask us for the details of our experience
It will undoubtedly help yours.

Steel Bull Wheel

Positive traction given by "V"-Grooved Tug Rim. Brake Cants securely clamped and bolted between two rings of steel Cants—easily replaced when worn. Arms attached to Tug and Brake Wheels for quick assembly in the field.

Steel Calf Wheel

Heavy bracing angles extend from each arm to each tug rim bolt. Tug rim is held firm and braced solid. It *can't* be pulled loose or out of line. Patented construction of the Shaft Hub insures a true-running, well-balanced wheel. Quick to assemble, long lasting.

The PARKERSBURG RIG & REEL COMPANY

Main Office and Works, Parkersburg, W. Va. ***New York Office,*** 30 Church St.

California Representatives, BUCK & STODDARD
485 California St., San Francisco, Calif.; Box 720, Arcade Station, Los Angeles, Calif.

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